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Delivered before the Society for the Study of Disease in Children on May 18th, 1906,

BY AUGUSTE BROCA, M.D,

PROFESSEUR AGRÉGÉ AT THE UNIVERSITY OF PARIS AND SURGEON TO THE HÔPITAL DES ENFANTS MALADES.

GENTLEMEN,—I could scarcely resist feeling a certain pride in speaking before you at this important meeting were I not called back to modesty by a more exact appreciation of the reality. For when you invited me to deliver this lecture, by which Mr. Wightman desires to perpetuate the memory of a son who too soon departed this life, I felt that I was indebted for this testimony of esteem to the circumstance that my Parisian colleagues had last year done me the honour of appointing me president of our Pediatric Society in Paris. As president of that society I had the pleasure to receive some of you (not numerous enough—allow me this reproach) when you came to Paris and visited our hospitals and great medical establishments. It is therefore to my French colleagues, through me, that your courteous invitation and appreciation are addressed. "Vous aviez d'ailleurs tiré les premiers, Messieurs les Anglais," by prompting us a few months before to proclaim medically our recent *entente cordiale*. With a great feeling of pleasure I personally saw the end of our secular rancours, which ought by mutual consent and a long time ago to have been immolated upon the altar of our common deity, Freedom. I am glad to have the opportunity of declaring here my opinion, for at that moment I was prevented from going to London, and I can assure you that it was not from any lack of sympathy with the movement.

Now that I have apologised for my unworthiness I must confess that I accepted your invitation with very great pleasure, but I should hardly venture to speak before you on such a common topic had not the first idea of lecturing on this subject come from your President, Mr. R. Clement Lucas, who had been struck when he visited my hospital wards by the great number of children operated on by me for appendicitis. He thought that it would be of interest to you if I related some of the observations which I had made during the past 25 years in children at an age when his own experience seems to suggest that this lesion is more frequent in Paris than in London. Some authors think that this frequency in childhood does not depend upon a true predisposition, the youngest being the most numerous amongst the population; the same proportion for a disease, whose real frequency is not modified by age, must give a larger number in the young. But that alone is not sufficient to explain the predominance found in Paris, where, so soon as appendicitis began to be carefully studied, important statistics were published founded on the experience obtained in our two children's hospitals, the cases being observed by the late Dr. Brun, by Jalaguier, and by myself. I will recall that in 1896 one of my pupils, Miss Gordon, took for the subject of her inaugural dissertation my first 79 cases of appendicitis in children, and since then I have operated more and more on patients under 15 years of age suffering from appendicitis, partly because we have learned to discover some cases formerly unrecognised, and partly also, it seems to me, because we have periods of increase due to the frequent returns of influenza to which we have unfortunately been liable since 1890. But if, as I understand from what Mr. Clement Lucas has written to me, the frequency of appendicitis in childhood is greater in Paris than in London, I do not think that influenza is the true cause of that difference, for influenza has now invaded all countries. If there is a particular cause my opinion is that it must be somehow connected with food.

In spite of some opponents, every day lessening, most medical men now consider that appendicitis is but the consequence, the localisation, of an entero-colitis formerly more extended. This localisation derives its surgical importance from the special anatomical connexion between the peritoneum and an intestinal appendix predisposed by its structure to lymphangitic inflammation and even to perforation. But it also seems that all forms of enteritis have not the same tendency to create appendicitis. Everyone knows how frequent gastro-enteritis is among babies not suckled and who, suffering from diarrhœa or constipation, insufficiently fed or overfed, end, according to the cases, in athrepsia, summer diarrhœa, or rickets. Appendicitis is, however, almost never seen in newly-born infants. The youngest on whom I have operated was 20 months old and such an age is very exceptional. One of the causes of this apparent rarity in infancy is, no doubt, the serious clinical difficulties we have to deal with; we are limited with very young children to an examination almost such as a veterinary surgeon might make on patients unable to give us any information unless by screams when our palpation gives pain. In this way the chronic forms, of which I shall speak to you by-and-by, escape us, and with them, no doubt, a great number of acute ones. But the fact is that our medical colleagues in their post-mortem examinations of nurslings who have died from gastro-enteritis never mention peritonitis of appendicular origin; they do not even describe the appendicular and peri-appendicular alterations whose importance we know well in older patients. This is partly owing to the fact that appendicitis takes a certain time for its development and for its surgical individualisation after the beginning of the causal enteritis; and I think that a few children who are attacked at the outset of childhood suffer from food badly digested. However, I do not believe this to be a rule and from the observations made at every age and in every country it appears that the general opinion of medical men is to the effect that an excess of flesh diet may be the origin of enteritis predisposing to appendicitis. But if English people eat a great quantity of meat when grown up, they are in the habit of giving little of it to their children during the first years of life—sometimes, perhaps, not even enough, if I may judge by what our French mothers call bringing up children *à l'anglaise*.

Among the predisposing varieties of enteritis there is one whose frequency has steadily increased of late years both in children and in adults. I mean muco-membranous enteritis and I invite particular attention to it, for some persons have supposed that there is a certain antagonism between that illness and appendicitis, but in my opinion this hypothesis is diametrically opposed to the actual facts. This point presents a double interest: firstly, for the diagnosis; and secondly, for the treatment. It is important as a matter of diagnosis, for I have seen some children die and others who almost died from repeated and unrecognised attacks of appendicitis because appendicitis in their cases was associated with evident attacks of muco-membranous enteritis; and those children's medical attendants, although of high professional standing, have sorrowfully learnt how wrong was the mischievous doctrine of antagonism. It is quite as important for treatment, for we are often obliged to subject our patients to medical and dietetic treatment for enteritis after their appendices have been removed. I am convinced that in every muco-membranous entero-colitis there exists an important nervous element. Some of them are purely reflex and disappear with surprising rapidity after the successful surgical treatment of disease of the abdominal organs, such as the kidneys, the uterus, the ovaries, &c. This may happen after the excision of a chronically irritated appendix; but the principal and most usual effect of such removal is the disappearance of long-standing and intense constipation due to intestinal atony from which many patients suffer before the operation. We do not obtain the same results in muco-membranous diarrhœa, and I am compelled to note the cases of patients who suffered from more or less serious relapses after the operation for appendicitis.

Clinical observation is not always able to determine with what certainty an operation would give relief in intestinal disorders; but if many times before the operation the symptoms were intense and prolonged it will be prudent after the surgical procedure to recommend that careful medical treatment should be continued for some months. I said that when enteritis exists appendicitis takes some time to develop, and I will now add that this process is very often a chronic one. Formerly we did not think so, for, struck

by the acuteness of threatening accidents, we have not always looked into the antecedents of our patients for the indication of former chronic lesions, but we were not long before asserting that those symptoms existed and almost all of us now regard appendicitis as a chronic alteration aggravated by acute episodes. This notion has become common nowadays, but it was less common seven years ago, when I drew attention to it in a monograph on appendicitis. The distinction is important and if one is to study successfully all that concerns the diagnosis and the treatment one must separate carefully the two states which I have just mentioned—the chronic state and the acute crisis.

In order to explain things more clearly it is now usual to draw a comparison between appendicitis and inflammation of the throat, for we know that the initial lesion of the appendix—an organ which has a lymphatic tissue exceedingly developed—is a chronic folliculitis, comparable to that of the enlarged tonsils and adenoid growths; we know also that acute disease of the appendix may vary from a simple hæmorrhagic spot of folliculitis to the gravest gangrenous lymphangitis, states which are comparable to more or less violent attacks of acute tonsillitis or adenoiditis. And going farther in the comparison, I am of those who assert that if in both these kinds of cases the best treatment is by a surgical operation, in acute attacks it is prudent to let the inflammatory accidents subside before using the knife. My first care will be now to explain in what clinical ways chronic appendicitis reveals itself to us and what are our elements of diagnosis. It is not rare during post-mortem examinations or during various laparotomies to find evident lesions of the appendix in patients who had never been suspected of appendicitis. But perhaps these cases, whose symptomatology is really *nil*, would be more liable to exception if explained by their true cause—that is to say, by chronic appendicitis; some kinds of gastro-intestinal derangements, however, we are beginning to trace to appendicitis and to cure by appendicectomy.

In their common form such conditions are marked by gastro-intestinal atony, frequently attended with flatulent distension of the abdomen, by dyspepsia, by eructations, and by constipation, which is often obstinate, is sometimes interrupted by diarrhœal discharges, and may be caused by particular kinds of food. I have had under my care some patients who could not bear even milk and eggs and whom I was obliged to feed with vegetables only. These patients have, as a rule, the tongue coated, the breath offensive, the complexion greyish and even subicteric, a capricious appetite, and habitual nausea. It is not rare for them to suffer also from gastralgia or stomach-ache coming on without known cause and very variable in frequency, intensity, and duration. The patient feels a sudden, sharp, and not well localised abdominal pain, associated with sudden pallor and even a fainting sensation. It is easily understood, then, that in certain serious but exceptional cases the growth of children may be stopped by such digestive disorders and a real cachexy may be established. Certain patients who had for years been treated for obstinate dyspepsia, even for supposed intestinal and peritoneal tuberculosis, or (in the case of adults) for supposed intestinal or gastric carcinoma, were really suffering only from chronic appendicitis. However latent the local symptomatology of appendicitis may be it is generally found that a feeling of weight, an indefinite pain, or at least some degree of uneasiness draws attention to the right iliac fossa and on careful palpation we feel, under an abdominal wall normally depressible, the cæcum a little thickened and without flexibility, expanded with gases and gurgling; sometimes also a small tumour rolls under the finger and is due either to the appendix itself or to enlarged lymphatic glands, although nothing enables us to determine this point with certainty. Deep palpation, especially on McBurney's point, gives rise to a slight pain which can be recognised either by the patient's testimony or by a small defensive contraction of the wall. These local signs teach us to explain by something of ileo-cæcal origin the abdominal disorders observed; they exclude, for instance, some incomplete forms of nephritic or hepatic colic; but they may lead to error for they may be signs of a commencing tuberculous disease of the cæcum. We must not neglect this lesion, rare but puzzling as to its diagnosis, because it may break out with an acute crisis and even an iliac abscess. Once I have been thus mistaken when I thought to operate on a simple appendicitis after subsidence of the acute attack; on another occasion I saw a patient for whom another surgeon had opened an acute abscess which remained fistulous. I must confess that I cannot define here the elements of a precise diagnosis; at least in those cases where nothing of a tuberculous nature exists either in the abdomen or elsewhere, even when cæcal infiltration is advanced.

Until now I have spoken of a symptomatology always obscure. There are, however, cases or accidents more marked and manifested by special and paroxysmal phenomena, amongst which vomiting in variable forms seems to hold the first rank. We may observe, firstly, children who in the morning only frequently vomit their food, although they rarely vomit bile and do not show any rise of temperature. In certain cases these vomitings become habitual and so profuse as to be a grave hindrance to nutrition. I remember some children relatively young—between three and five years of age—who after an attack very variable in acuteness and form were unable to take any other food than vegetable broth. To some not quite compulsory vomitings may be added very different symptoms occasioning real difficulties of diagnosis. I remember a girl who suffered from obstinate constipation, headache, and retraction of the abdomen *en bateau*, so that one of my colleagues diagnosed tuberculous meningitis. Another patient, a boy, was, on the other hand, constipated with large meteorism, and another patient had acute intestinal obstruction with fæcal vomiting but without fever. However, he had only a paralytic reflex obstruction and two hours afterwards the opiates employed provoked the emission of gases and the end of every symptom. These patients recovered after removal of the appendix. In the main these cases constitute a series in which the symptoms of dyspepsia with gastro-intestinal flatulence are exaggerated either continually or by sudden attacks. Palpation and observations of the temperature prove that infectious phenomena are nearly *nil*. When an operation is performed we find sometimes some old peritoneal adhesions but more often we find none and the alterations are those due to simple chronic appendicitis. One can only see on the mucous membrane the hæmorrhagic stippling of one or two points of folliculitis.

In another series the infectious element becomes more important and a very frequent clinical form is the one where, although the initial dyspepsia may be very slight or even absent, there suddenly breaks out every sign of an *embarras gastrique fébrile*; sometimes after too plentiful a meal, sometimes without any appreciable cause, the child has an attack of indigestion with vomiting of food, the temperature very quickly runs up to 39° or 40° C., the tongue becomes coated, and the breath has a sour smell. At the same time he experiences abdominal pains which are localised either round the navel or in the right iliac fossa and on palpating this latter region you find some pain at McBurney's point, a slight muscular resistance, but no trace of phlegmonous infiltration. These last objective signs allow us to make a precise diagnosis if we are called in at the very moment of this slight attack and so we have learnt the great clinical value of *embarras gastrique* irregularly repeated in the previous pathological history of patients either suspected to suffer from, or really suffering from, chronic appendicitis. Beware of these frequent indigestions which mothers treat with an emetic or some other domestic medicine, when to the vomitings are joined a sudden fever and colic principally on the right side. Those accidents, even when not attended to, do not last more than one or two days. But in some cases they grow worse and more frequent, so as to present the classical appearances of the periodical acetonæmic vomitings of childhood. I have pointed out facts of that sort and have spoken of children treated during several years for such a disease by eminent medical men and restored to health only by the removal of their chronically inflamed appendices; I have also said that for that kind of patients it was very important to pay serious attention to the spontaneous pain or to the one excited by pressure on the right iliac fossa. I said also that for those patients it was necessary to trace the physical signs of chronic appendicitis, such as I have just described them. We shall acquire in so doing the elements of a sure diagnosis which is sometimes neglected. But I have not said or thought anything more on the subject and I have been very surprised to read in some recent papers on the matter that I considered always the periodical acetonæmic vomitings as a form of appendicitis. When these patients are operated upon it will be found that appendicular or peri-appendicular inflammations are, on the average, more intense than in those of the first series, which

have only dyspepsia with little or no rise of temperature. And here, with the ordinary follicultitis joined to an old sclerosis, we find sometimes omental adhesions; but one may say that, with some exceptions, these changes do not require immediate surgical interference, however alarming the symptomatology may have been. The impression produced in these cases, paradoxical as the statement may appear, is that of an acute symptomatology associated with a chronic pathologico-anatomical lesion, and certainly in these cases post-mortem examination will never cause the surgeon the regret of not having operated rapidly enough to anticipate the infection. Besides, if we examine thoroughly these patients' pulse, temperature, and functional indications of general or peritoneal infection, and if we ascertain at the same time the depressibility of the ileo-cæcal region under palpation, we do not find in these signs any indication for an immediate operation.

However, I shall not decide that the surgeon is never to interfere in these cases. Rather, on the other hand, I think that it is only to the surgeon that these patients should go, and it is convenient to state now the aphorism I shall soon fight for in another sense—namely, the aphorism "that there is no medical treatment of appendicitis." I admit that patients who suffer from chronic appendicitis and enjoy uninterrupted rest and take an exclusively vegetable diet may, if not cured, have at least no acute attacks and nothing save some insignificant uneasiness. But although that rest may be obtained for grown patients (exception being made for the working class), it is impossible to obtain it for children, especially in the case of boys in whom severe exercise, fatigue, articles of food consumed surreptitiously, and often some unknown cause, may readily excite grave attacks by which life is suddenly threatened from peritoneal or even general infection. And then is to be considered the grave question, Must the surgeon operate during the acute crisis? In order to take, I do not say an absolute and final, but a reasonable, step we must first consider the dangers we have to deal with. When an acute attack occurs in an appendix, whether it has or has not been already the subject of chronic irritation, the initial lesion seems to be the same as I have described above—namely, follicultitis, more or less intense, more or less limited. But from it may result a real lymphangitis, grave and diffuse, simple or gangrenous, perforating or not. Then the phenomena of general infection and peritonitis, which had remained at the second stage in the preceding forms, attain their full development. General infection seems to be conveyed especially through the veins. The origin of some cases of pyæmia with predominant hepatic abscesses is without doubt a pylephlebitis starting from the vermiform appendix. In other cases there is a true septicæmia, without any suppuration of the liver, which, however, undergoes fatty degeneration with extraordinary rapidity. The appendix is generally found to be gangrenous in these conditions but this is not an indispensable concomitant. Lesions are found which are sometimes so insignificant that after operation we have some reason to think that in reality we are in presence of a septicæmia, originally intestinal, where the appendix is unquestionably infected to a certain degree, but is involved only for a part and even for a very small part of it. These forms, which are not very well known to us yet, are anatomically and clinically very different from those in which accidents special to appendicitis depend upon the particular anatomical connexion between the appendix and the peritoneum. Then two principal forms are to be considered according as the peritoneal inflammation is or is not circumscribed by adhesions, for diffuse peritonitis, more or less septic, and encysted peritonitis ending by a localised abscess evidently have a very different prognosis. The gravity of these general or local infecting accidents is extremely variable. They stand between the slight attack with very sudden and transient high fever and those in which death occurs in two or three days. And it is easy to understand that these catastrophes haunt our memory, the more because the beginning of the illness does not always allow us to guess with precision what will be its ulterior evolution. Hence arose the opinion, tempting because simple, that the surgeon must always operate in acute appendicitis as soon as he is called to give his advice. 12 years ago it was the opinion of almost all surgeons, myself included, and I am convinced that in acting as we did at the beginning of our practice we saved many lives. It was at a time when our surgical activity was checked by numerous physicians, reactionary leaders of medical therapeutics. By taking the general average of the statistics of various operators we arrived at a mortality of about 25 per cent. and in spite of some medical statistics published at the time I am persuaded that our success was infinitely superior to that of our opponents. As they have become less and less numerous it is useless to refute them now.

However, their assertions were partly true. Very often, after rejecting our recommendation of immediate operation, they obtained the resolution of what was formerly called perityphlitis and is now named appendicitis and on our part we became aware that for patients whose attack had passed off under medical treatment the operation performed in the interval between attacks, *à froid* as we say in France, was very much better. It allows easy removal of the appendix, which is not always possible amongst the adhesions of an encysted peritoneal abscess. It almost always enables us to obtain primary union after careful suture and so we avoid the hernia which is so frequent after an abscess has been incised. Moreover, it not only saves the patients from these two causes of a second operation more or less delayed but it also yields a reduced mortality of 10 per cent. instead of 25 per cent. in the hands of the same surgeons. We exclude, of course, operations for chronic appendicitis, the mortality of which is almost *nil*. I am speaking now especially of the acute cases that are brought to the hospital, including those which we see for the first time when they are already suffering from diffuse peritonitis and almost hopeless. I insist on that point because there is an important difference between private and hospital practice. In the acute attacks, with localised suppuration, we are liable to inoculate with the pus the adjacent peritoneum not protected by adhesions. Then follows a fatal peritonitis and now we know that a too early operation was the cause of this diffusion. So a general understanding was arrived at, or nearly so, between the members of our Surgical Society in Paris and the debate which took place in 1903 proved that almost all our colleagues, renouncing the rule they had adopted in 1899, had given up the practice of always operating immediately. They think now (and it has been my opinion since 1896) that the rule must be, Operate immediately if you are called within the first 24 hours following the outburst of the acute attack, but when you are called afterwards you must act according to the indications given by each individual case, and then with the idea of calming as much as possible the attack before operating. It is certain that the early operation, in the first 24 hours, before perforation or gangrene, before adhesions and suppuration, can be performed under anatomical conditions almost identical with those of the operation *à froid*, and nearly all the objections previously mentioned are then of no account. But in order to act in this way our diagnosis must be absolutely certain and in children this is difficult to obtain, in association with certain clinical features understood by all practitioners who are in the habit of attending or operating upon children, and this is the reason why they came to a general agreement about the subject. The causes of error exist both for peritoneal and septic forms. When a child presents symptoms of acute peritonitis it is often more difficult to decide quickly in him than in an adult whether the appendix is attacked. Tubo-ovarian inflammation no doubt conduces to error in the case of women but less than pneumococcic and gonococcic peritonitis in childhood, and we must remark that in a great majority of cases the pneumococcic form attacks girls and that the gonococcic cases are exclusively reserved to them. The diagnosis is generally easy when the right iliac pain is clear, immediate, localised and sharp, spontaneous or excited by pressure; when in a few hours the phlegmonous swelling with muscular defensive contraction of the abdominal wall is evident. But we must be cautious when children say that their abdominal pain is around the navel and when the swelling is relatively slow in forming. Besides that the pain limited to pressure with muscular contraction may also exist in the forms of peritonitis which I mentioned, for pneumococcic peritonitis is usually more or less encysted around the initial point, and gonococcic peritonitis starts from a tube, without, however, any tubo-ovarian tumour which could be found by rectal investigation as occurs in women. In gonococcic peritonitis the patient's state soon becomes very grave; the pulse is frequent, very small, and very weak; there is also cyanosis of the face; and these symptoms should attract our attention if the girl is suffering from vulvo-vaginitis. But at the commencement of pneumococcic peritonitis, save in the rather

uncommon case of a previous pleuro pneumonia, the nature of the case is quite uncertain and remains so up to the moment when pus is formed in the abdomen. As a rule, immediate diagnosis is impossible. On the other hand, it is certain that opening the peritoneum most seriously aggravates the virulence of the gonococcic infection; it also aggravates pneumococcic peritonitis just as much in an early stage before the formation of pus. The first of these two forms of peritonitis will never be amenable to surgical treatment; the second one will be but not in the initial stage. In fact, in both forms one may meet with serious complications if one tries exploratory laparotomy. On the other hand, laparotomy does not cause any injury in the beginning of tuberculous peritonitis simulating the beginning of appendicitis.

Another difficulty arises in children when symptoms closely resembling those of an appendicular attack, without iliac swelling, but accompanied with sudden fever and vomitings, are due to intestinal helminthiasis. In some of them the crisis ends after one or two days by the spontaneous evacuation of the ascarides. As early as 1893 I had one of these cases published by my pupil Jacob in his inaugural dissertation. These cases have been used to support the hypothesis that appendicitis may be provoked by intestinal worms. I believe this hypothesis to be unsound, but such facts must put us on our guard against performing an operation when we are not able to establish with precision an immediate diagnosis. Certain septic conditions without any peritoneal symptomatology but with pain at McBurney's point give rise also to mistakes. For instance, I see occasionally children who are supposed to be attacked with appendicitis and who are suffering in reality from pneumonia with an abdominal "stitch." This condition is easily diagnosed if the classical stethoscopic signs exist at the same time. But the perplexity is great in the case of a central pneumonia where the signs become manifest only after two or three days. These cases are not rare enough in children to give us a right to neglect them. Similar conditions also occur in association with pleurisy. Lastly, one must bear in mind, still more, I believe, in children than in adults, the possibility of typhoid fever beginning suddenly with vomiting, iliac pain, and even enlargement of the cæcum and its lymphatic glands. I have observed two cases, particularly obscure, where typhoid fever began in this way, though I knew that they were undoubtedly suffering from a previous chronic appendicitis.

My personal opinion and that of all my Parisian colleagues who are familiar with the treatment of the diseases of children is that these unavoidable doubts in diagnosis hinder us from adopting the rule (excellent in cases where the diagnosis is certain) of operating in every case within the first 24 hours. Again, we are ordinarily not called in soon enough for this because the small and slight attacks, which are by far the most common, are usually regarded by the mothers as indigestion and treated by them as such, so that when the medical man is summoned some time has been already lost and still more is wasted before the surgeon arrives. The opinion which begins to prevail is to the effect that when for one of the reasons stated we have begun waiting we must continue to do so, whilst studying from the moment we are summoned the clinical indications for an immediate, early, or postponed operation in each particular case. I think it useless to insist before you on the clinical phenomena which in diffuse peritonitis require immediate surgical interference—such symptoms as want of correspondence between pulse and temperature, green vomit, anuria, dryness of the tongue, alteration of the facial expression, and retention of the intestinal gases are all signs of diffused peritonitis or of peritonitis on the point of becoming diffused. We must except, however, patients brought to the hospital who are presenting these symptoms after a fatiguing journey and who feel themselves much better after some hours' rest. In these forms of diffuse peritonitis some surgeons, thinking the case hopeless, decline to operate and allow the patient to die. I believe that they are wrong, for now and then some cases judged to be hopeless have recovered after laparotomy. One might argue perhaps that peritonitis was not, in such instances, truly generalised. But the clinical fact remains that when the symptoms of generalised peritonitis exist recovery after a surgical operation is possible though exceptional. We must therefore operate without aiming at being able to show brilliant statistics. Encysted peritonitis must be operated on immediately only if an abscess has formed; in that case immediate operation is followed by remarkable success and we must not delay it if after the third or fourth day the fever persists and runs high and if there is swelling in the iliac fossa or beside the rectum. Further, without joining the few who advise waiting for fluctuation, we must come to an understanding about such cases. When in operating we find pus we must not conclude that the operation could not have been postponed until the day after, as has been said by many observers. For instance, in operating a long time after the subsidence of an attack we discover around an appendix sometimes calculous or even perforated remains of an abscess (caseous matter between adhesions); surely in these cases there has existed pus which has become harmless.

Things being so I have not been very surprised that in spite of the scientific precision of laboratory investigation the study of leucocytosis of the blood has led several observers to contradictory conclusions. We have in this condition a valuable indication but not the positive criterion desired by some surgeons and we must be content to associate it with the whole of the physical and functional phenomena of which I am going to speak in studying the cases in which we attempt to calm the attack. In doubtful cases we should inquire what medical treatment has been applied during the preceding days. In fact, it is sometimes astonishing how rapidly judicious treatment acts on patients who have been made worse by the use of purgatives and by inappropriate feeding. I consider it useless to give here particulars of what is meant by "medical treatment" in the acute attack. It may be recapitulated in few words: complete deprivation of food, only a few spoonfuls of pure water, and large bags of ice on the abdomen. In former times I always prescribed opium, now I give it only when specially required, when colic is very painful and not explained by an increase of the iliac swelling. I must especially draw your attention to the dangers of purgatives and must remark that patients who take milk or broth do not follow the regimen strictly. Patients thus treated must be carefully watched so that they may be operated upon, not only when the slightest appearance of peritonitis is noticed but also if the fever does not yield quickly and if the local swelling progresses. From all this it results that we should delay less when there is pelvic localisation of the swelling, a form difficult to watch and of which the diagnosis is made by paying attention to some special clinical facts, such as vesical pain in passing urine, and above all by systematically exploring the rectum with the finger. We must also remember that we are not to act in the same manner with patients who live in town as with those who live in the country; these latter almost always require to be operated on immediately. According to all these preceding facts there is no absolute rule to be always followed, but a good clinical observer will rarely allow himself to be surprised by peritonitis during an appendicitis with local swelling in which he watches an abscess in formation; and then disappointments will be less frequent than from diffuse peritonitis following an operation undertaken too late or from one performed too soon after the beginning of a peri-appendicular abscess and before the protecting adhesions have formed between the deeply seated pus and the anterior abdominal wall. The real difficulties of diagnosis and the painful surprises for surgeons are not due to these encysted peritoneal forms but to certain forms of gangrenous appendicitis in which diffuse peritonitis with vomiting of green or even black material (without doubt the final phenomena) occur; but in which, until that brutal and final outburst, peritoneal symptoms remain unheeded. The patient is dangerously infected, highly feverish, pale-faced, sometimes looking sub-icteric with cyanotic lips, but in the abdomen we do not find clear signs. The initial iliac pain draws attention to the appendix but I have not verified that it was from the beginning specially intense. In palpating the abdomen we do not find any swelling and we often cause but little pain; even the abdominal wall can be sometimes on all parts easily depressed when the appendix is in its normal place, *a fortiori* when it is hidden far away from our fingers in such a region as the top of the pelvis or in the lumbar fossa. During the operation we learn why no swelling was felt, as then we find around the gangrenous appendix very little pus and but very few soft adhesions.

Every one of us has saved some of these last patients by operating upon them immediately after the diagnosis was made. But all of us, also, have with some others failed to make a diagnosis during a certain period. First, because

these cases being of a kind in which positive local signs are missing, we are uncertain as to the appendicular origin of the observed septicæmia; and secondly, because the appendix being incriminated it is very difficult to establish an early diagnosis between the gangrenous form which requires the immediate excision of the appendix and some other very septic form in which macroscopic alterations of the appendix are very slight and where it seems that the shock of laparotomy and the effect of the anæsthetic do harm by stopping, even for a short time, the hepatic and renal functions, already embarrassed by the sudden septicæmia. There are cases of grave jaundice with vomiting of blood in which the yellow atrophy of the liver seems to be the result of an appendicular folliculitis at first sight insignificant; the operation, even when performed at the beginning, as soon as our attention has been aroused only by a slight sub-icteric tinge, does not improve the progress of the disease. Now I have seen two of these cases—in grown-up patients I must say—with jaundice, fever, and rigors, that improved little by little, so that some weeks afterwards I removed a sclerosed appendix with traces of old folliculitis but without any trace of peritonitis around it. Therefore, especially in these cases, we remain doubting and sometimes we allow death to ensue while we wait. We may even in diffuse peritonitis accuse ourselves of having lost a favourable opportunity, but there is nothing to demonstrate that in operating earlier we should have succeeded better. Experimental as well as clinical study teaches us that the most rapid excision of an inoculated point does not stop infection if it is of a certain degree of virulence; the more so if we are aware of the inoculation only by local and general reaction in connexion with it, especially when so deeply situated an organ as the appendix is concerned. Those cases are happily very rare. The common cases are the peritoneal ones. For these, well treated, sometimes (I repeat it) an abscess will cause us to perform an immediate operation; we shall be rarely surprised by diffuse peritonitis if the patient is carefully watched; generally we shall succeed in calming the attack. It is well, then, to remove the appendix about a month after, if the attack has been slight. When the crisis has been grave we must wait longer according to the case. When I began to practise I thought with many of my colleagues that the operation was not necessary after a first slight attack. Now, on the contrary, we have all agreed about the necessity of operating after such a warning. A relapse is not inevitable but it is frequent, and we cannot guess how intense a new attack might be. For this reason we are right in saying that there is no medical treatment of appendicitis. When we do not operate immediately it is but to give time for the acute crisis to subside; then the operation is less dangerous. I have always said so and I now insist upon it because some authors—whose only excuse must be their complete ignorance of my writings—have described me as an obstinate abstentionist. You will also kindly allow me, in conclusion, to quote the phrase I printed in 1900: "The true question is to decide whether non-operative treatment is capable of calming a crisis when instituted well and in time; and whether it is better to try this treatment as often as possible, so as to replace the immediate operation by a delayed one. To that question I answer in the affirmative."

Before closing this lecture I must briefly describe what I think is the best technique for the operation. This account will be short because opinions agree save for some details.

1. Diffuse peritonitis requires, first, a long incision in the right iliac fossa, through which I think we must always try to remove the appendix. Almost always we must add to that first incision a median one, and often a third one in the left iliac fossa. The drainage must be very free, with very large indiarubber tubes going in different directions in the abdomen and the pelvis. Sometimes I wash out the abdomen with boiled water or physiological salt solution but I do not employ this method regularly because I am not at all convinced that it improves the always unfavourable prognosis of the operation.

2. Encysted suppurating peritonitis is treated as a simple abscess, by a large opening. No rule need be given; the incision is to be made where the abscess is situated, on the right side or on the left, in front or behind. There is a divergence of opinion as to the treatment of pelvic abscesses. Some authors teach that the best plan is to open them by rectal incision. It cannot be denied that these abscesses after abdominal incision progress often worse than the other ones. On the other hand, they sometimes heal spontaneously by discharging through the rectum; hence came the idea to imitate that natural method of evacuation. In spite of some successes due to that proceeding, I do not think that it ought to become general. I esteem it dangerous for the high-situated abscesses, which we must search for blindly, with special trocars, and as to the lower abscesses, which can be felt by the finger near the anus, they almost always can be drained through the iliac fossa—sometimes through the left one—where there are swelling and adhesions. It is very rare to find that the appendix goes directly downwards and that an abscess has collected in the pelvis whilst the iliac fossa is entirely free. But when it happens so, the rectal incision may be of real help. I remember, for instance, a girl whose iliac fossa I opened; I found the peritoneum here normal but a hemispherical arch of adhesions transformed the pelvis into a large purulent cavity. Judging the escape of pus into the peritoneum to be dangerous, I immediately closed the abdominal wall and opened the abscess by the rectal route. The patient recovered rapidly. After the spontaneous or surgical opening into the rectum, it is scarcely necessary to say that the appendix is not treated and frequently it gives no more trouble. Not always, however, for twice I have been obliged to remove it afterwards on account of persistent septicæmic disorders. The discussion as to what is to be done with the appendix in localised abscesses has to do with abdominal incisions. Some surgeons have advised its removal always at once. They say that it is the only sure way to stop the peritoneal infection around it and later to prevent such accidents as fistula, relapsing attacks, &c. But by breaking the adhesions and by inoculation of the serous cavity this method may cause post-operative diffuse peritonitis. In these cases I remove the appendix only when I see it easily under the adhesions and owing to my experience of these cases having extended I act in this way more and more often. I tie the appendix and cut it with the thermocautery; the cæcal wall is too much softened to bear a suture destined to bury the stump.

3. In the delayed operation, *à froid*, as we say, the *absolute* indication is to remove the appendix, and whatever may have been said it is always possible but not always easy. First, the appendix may hold in the abdomen various positions scarcely accessible when adhesions exist; secondly, because even when we can easily discover the appendix some difficulties and dangers may arise from adhesions and from relics of old purulent matter. We must be possessed with the idea that a positive diagnosis of this state is often impossible. It may happen that we feel in the iliac fossa the cæcum scarcely thickened or painful, yet in operating we find either behind the ascending colon and near the liver or in the upper part of the pelvis an adherent appendix surrounded by caseous matter.

For that reason I gave up the vertical incision known in Paris as "Jalaguier's" by which the appendix is removed through the aponeurotic sheath of the right rectus muscle. This muscular band lies afterwards opposite the sutured aponeurotic incision and prevents the occurrence of a subsequent hernia. By this method the removal of the appendix is very easy in simple cases but when we have to seek it deeply and when the cavity must be drained we expose ourselves to serious troubles. Therefore, after several attempts, and each time after cases where in operating I found unexpected difficulties, I adopted again the oblique iliac incision named "Roux's incision." But in this the muscles are divided and even after very good primary union a hernia is to be feared. Then I adopted finally the proceeding of McBurney in which after an oblique incision of the skin the muscles are not divided but separated between their fibres. The way to the ileo-cæcal region is very direct and if we meet with difficulties, with lesions calling for drainage, we can cut the abdominal muscles upwards or downwards and we have then all the advantages of "Roux's incision."

I have done now with these questions of technique; I could expound to you a general method but I should fear to become wearisome in detailing to you how to bury the stump or to close the abdominal wound. Moreover, I have already occupied your attention too long, whilst forcing upon you my bad English. You will forgive me, I hope, on account of my goodwill for having spoken myself instead of intrusting your secretary with my translation and the reading of it.

An Address
ON
DYSPEPSIA.

Delivered before the Cleveland Branch of the British Medical Association on Feb. 21st, 1906,

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MR. PRESIDENT AND GENTLEMEN,—The rapid rise and marked success of the operative treatment of organic diseases of the stomach of almost all forms is, perhaps, the most remarkable feature of the steady and irresistible advance which surgery has been making against abdominal disorders during the last 20 years and it has resulted, as we all know, in the transfer to the surgeon, so far as curative treatment is concerned, of, I think it may be said, the great majority of the cases of organic disease which in former times remained for weal or woe, to the end, in the hands of the physician. Whilst this transfer of work from the medical to the surgical side has relieved the physician of much that was unsatisfactory in the highest degree, consisting, as it did, of the prescribing of drugs and the ordering of diets, of which he had little but a purely empirical knowledge and with results which were for the most part disappointing to him and to the patient, it has, at the same time, very largely increased his responsibility in the matter of diagnosis and consequently in the advice which he should give as to whether surgical or medical measures should be adopted in any given case.

To the pessimistic physician it has at times seemed that surgery would very soon leave him without an occupation so far as diseases of the abdominal viscera are concerned, but so far is this fear from being realised that a notable increase in the number of those seeking a medical opinion may be observed directly traceable to the increased prevalence of surgical operations in the community. It may truly be said that Function is the special care and study of the physician whilst Structure is the special care and study of the surgeon. The physiological standpoint is the standpoint of the physician, the anatomical that of the surgeon. He who views disease of whatever kind from the anatomical or structural point of view very naturally seeks for an anatomical or mechanical basis or lesion to explain the disease, and he naturally sees nothing but a mechanical—that is a surgical—procedure for its cure. But we live and have our uses by function and not by structure, and our functions being good enough for our purposes we are very wisely quite indifferent as to our structure. The focal or anatomical view of disease and its eradication by surgery is, and always will be, the most attractive view both for patient and practitioner and very naturally so, and it is consequently not to be wondered at that it is extremely difficult for the surgeon as well as the patient to keep himself entirely free from a bias or prejudice in favour of the anatomical or surgical view of the malady in question and it is in supporting and strengthening the patient, and not infrequently the surgeon as well, against this natural but possibly dangerous bias, that the physician at the present day finds no small employment. If this is so it clearly behoves the physician so to equip himself that he may do his part with perfect justice both to the patient and to the surgeon; on the one hand striving that all mechanical conditions in the stomach which need it shall at the earliest possible moment have the advantage of that mechanical, surgical treatment which alone can be of any lasting service and, on the other hand, that all non-mechanical—that is, what we call functional—disorders shall be saved the pain, danger, and cost of ineffectual and unnecessary procedures. In former times, when a diagnosis could lead to nothing more than medicinal and dietetic treatment, no very great responsibility rested with us, for whatever wrong we might do we did not expose the patient to any greater danger or delay than that involved in ordering an acid when perhaps an alkali would have been better, or instructing him to take white meat instead of red, or to drink Vichy water instead of soda-water, or sending him to Harrogate instead of to Carlsbad. Now all this is altered and I say at once that a physician who wittingly, or unwittingly, wastes the time and resources of his patient in the medicinal or dietetic treatment of what he knows, or ought to know, is due to a detectible anatomical or mechanical condition in the stomach which only surgery can relieve fails in his duty to the patient and to himself, whilst he equally fails if he subjects his patient at the hands of a surgeon to a useless and therefore unjustifiable operation. It is in order to invite discussion on the relative frequency of the occurrence of cases of gastric disease, which an operation alone can cure, that I have taken "dyspepsia" as my text this evening.

The term dyspepsia is used by the lay public to cover every conceivable disturbance of digestion and every abnormal sensation that can be referred to the abdomen. With us it means nothing more than that the natural process of digestion is disturbed and no longer painless and pleasurable as it ought to be. The moment we have found a mechanical explanation for the disturbance in question the case ceases to be for us one of dyspepsia and becomes one of pyloric obstruction, gastric ulcer, carcinoma ventriculi, or what not. The term dyspepsia, if we continue to use it, should mean for us a disturbance of the digestion of food, which is due to a functional and not a structural defect on the part of the stomach—that is, a defect in its secretion or in its motility, or in both. My main purpose is to ask the question, Is such dyspepsia of frequent occurrence or does it indeed exist? My own belief, after a careful consideration of my experience, is that it is a very rare disorder, and that when abiding persistent dyspepsia or painful digestion of food is present it is most commonly due, if due to the stomach at all, to physical changes in that organ, which may or may not be discoverable on physical examination. I do not deny that dyspepsia in its slighter degrees is a very common ailment, but I venture to think that whenever it has reached such a degree of intensity as to become a matter for investigation by a medical man we should be very careful of our ground before we take up the position that it is due to functional disorder of the stomach.

Many gross and serious disturbances of gastric digestion are seen which are not dependent upon anatomical changes in the stomach but they are not therefore to be regarded as due to purely functional disorders of that organ. Indeed, I am prepared to say that by far the greater part of the cases of dyspepsia which I see, which are not due to organic changes in the stomach are due to disturbances outside the stomach altogether—are due, in fact, to blood states, circulatory disorders, intoxications, nervous diseases, &c.—that is to say, given a normal supply of normal blood and a normal state of the nervous system, the stomach, in the absence of organic structural changes in it or its orifices, is no more likely to manifest functional disturbances than the urinary bladder or any other hollow viscus, supposing its content to be of average normal composition.

I am no believer in wholesome food in its many varieties as a cause of indigestion. I am no blind prohibiter of tea, pastry, cheese, and pork in cases of dyspepsia. The infant who is fed on improper food (decomposing milk, &c.) and the man who drinks too much alcohol are both liable to gastro-enteritis (that is, organic change) in varying degrees. The latter knows the cause of his ailment and can avoid it if he will. The former could and would, I believe, do the same if he could talk and were a free agent. When we allow ourselves to believe that ordinary articles of diet in ordinary quantities are a cause of dyspepsia, it is then that we are in the greatest danger of overlooking serious organic disease. The human stomach is by nature tolerant of—indeed, eager for—a mixed and very varied diet, and green apples, pork, cheese, pastry, and tea are not abnormal constituents of it and are not causes of disease. They do not all agree with everybody and tastes differ, but we are not to say on that account that they are causes of disease and to forbid them to those who care for them. Food is the natural content of the stomach and to believe that food is the cause of disease is just as dangerous, to my mind, as to believe that cold causes peritonitis or that open windows are bad for consumption, or that puerperal fever arises from bad drains. I am not saying that the food content and structure being normal true functional disturbances of the stomach never occur. I only wish to state my belief that they are so rare that they

should only be said to exist upon the clearest grounds. My firm opinion is that when dyspepsia of any severity or standing is present which can be shown not to be due to conditions outside the stomach there is great probability of its being due to organic disease of some kind in the stomach, even though it cannot at the moment be detected. How rarely one makes a diagnosis of dyspepsia in boys and how indiscreet they appear to us to be in the matter of food! They may occasionally vomit from excessive eating but for such moral delinquencies they do not naturally see a medical man. Whenever a boy is suffering from any substantial disturbance of digestion (and he very rarely does so) it will generally be found sooner or later to be due to organic disease either inside or outside the stomach.

There has been recently under my care in the Leeds Infirmary a man, 24 years of age, suffering from dilatation of the stomach due to simple pyloric obstruction. All the typical signs of this condition were present in a marked degree. A posterior gastro-enterostomy was done by my colleague, Mr. W. Thompson, and the patient left the infirmary in due course completely relieved of symptoms which had troubled him more or less for 12 years—that is, since his twelfth year—and his history is so instructive that I venture to bring it before you. When 12 years old he began to suffer from attacks of discomfort and actual pain after food lasting for periods varying in length from a few weeks to a few months, during which time he would be said to be suffering from dyspepsia and would be treated by various medicines and diets. Then for a few weeks or months he would be well and then another attack of "dyspepsia" would occur. The attacks gradually increased in length and the periods of remission gradually shortened until for the last two years he had never been free from distress more or less acute. At one time his stomach pains were relieved by food, a fact which many would say made one almost certain of the absence of organic disease. Then five years ago vomiting began and has been present in every attack since and when he came into the infirmary he had, as I have said, all the symptoms and signs of pyloric obstruction in a most marked degree and was reduced to an alarming state of emaciation and feebleness. It is impossible to escape the conclusion that this patient had been the subject of slowly increasing pyloric stenosis ever since his twelfth year and that he has waited 12 years for the only remedy—gastro-enterostomy. What various opinions must have been given and what various drugs and, above all, what various diets he must have suffered in those 12 years! No one was to blame; according to the views of 12 years ago he suffered from dyspepsia and was treated accordingly. With our present knowledge how difficult and even impossible it is to make a correct diagnosis in the early stages of the diseases of any internal organ and the stomach is no exception to this rule. Before the advent of physical signs in the abdomen—and these are to my mind the signs of paramount importance in the recognition of organic disease—by what means are we to distinguish between disturbances due to organic disease and those of functional origin? In trying to answer this question may I put before you a few clinical impressions which I have formed in the shape of propositions as follows? 1. Given the same symptoms in kind and degree, age and sex have an important bearing: in children (not infants) and adolescents stomach disorders due to organic gastric disease are very rare in males, less rare in females. 2. In young women stomach disorders are frequent and organic disease—e.g., ulcer—is common. In older females stomach disturbances not due to organic gastric disease are common but not more common than in males. 3. Whenever a man in middle life, who has hitherto had a good appetite and a good digestion, begins to complain of persistent loss of appetite and a painful digestion, the probability is that if the stomach is to blame it is the seat of organic disease. 4. Chronic vomiting, if due to stomach disorder, almost always means mechanical disease. 5. Any case of gastric disorder, which is associated with marked loss of flesh, is almost always organic. Anæmia, and above all cachexia, have the same significance. 6. Any gastric disorder which is seriously benefited by rest in bed and by restricted diet is probably of an organic nature. 7. Many cases of gastric ulcer in women have no physical signs except tenderness on pressure. Hæmatemesis would, of course, never be allowed to be due to dyspepsia alone.

If, then, such manifestations as pain excited by food, vomiting, hæmatemesis, with or even without (if that is possible) anorexia, wasting, pallor, and weakness, and which are relieved by rest in bed and restricted diet, almost always mean organic disease of the stomach, what symptoms worth mentioning are left to indicate functional disorders of that organ? Sensations of fulness and heaviness in the abdomen after meals, flatulence, acid eructations, pyrosis, borborygmus, deficient appetite, and constipation are the chief of the symptoms commonly mentioned by patients and discussed by writers as evidence of dyspepsia, and if after careful examination of the abdomen and all other regions and organs of the body we can find no evidence of organic disease we are then, I admit, justified in saying that the patient with such symptoms is suffering from dyspepsia—that is, a functional and not a structural defect of the stomach. That such cases are of common occurrence I beg leave to doubt. Such complaints are common and they are common in persons who present no evidence of organic disease in the stomach but are they common in persons who, while presenting no signs of organic disease in the stomach, can be declared to be of sound health in all other organs and so by the method of exclusion can be said to be suffering from functional disturbance of the stomach pure and simple? I am strongly inclined to answer this question in the negative.

Let me direct your attention for a moment to one of these symptoms, viz., flatulence, in order to show, as I think I can, that its least common causes are gastric disorder and errors in food. Flatulent distension of the stomach or a sensation of it (for it is not by any means always associated with actual visible inflation of the organ) is a very common and very distressing complaint, yet how rarely is it complained of by those who suffer from organic disease in the stomach, such as pyloric obstruction. Eructations, belchings, rumblings, borborygmi, are not always associated with flatulence, neither is pain. In its most typical and most distressing form flatulence consists in the sensation of extreme distension of the stomach by stagnant gas, such as we see very commonly in angina pectoris and other conditions of grave circulatory embarrassment, and I cannot doubt that flatulence even in its minor degrees is much more a circulatory than a digestive disorder. How constantly we hear sufferers from angina pectoris say that the moment the wind begins to move relief comes—that is, as soon as peristalsis is restored by the recovery of the circulation in the walls of the stomach the condition of angina and flatulence is at an end. How many cases of angina pectoris in their earlier stages are called dyspepsia because of this flatulence and are treated in the worst manner possible in consequence by diminished food, purgatives, and enforced exercise! I have long thought that a condition of the stomach in all respects analogous to the condition of the heart in angina pectoris—i.e., muscle failure due to impaired blood-supply and consequent distension—is a very real indication of circulatory weakness in elderly people and should be treated as such by food, stimulants, laxatives, and rest. Flatulence, such as I have described, is always relieved by food, never by restricted diet, just in the same way as borborygmus is relieved by eating and not by abstaining from food. I believe, then, that flatulence is much more frequently an indication of circulatory failure than of indigestion and that it is therefore much more likely to be improved by encouragement to eat ordinary solid food than by enforcing any restrictions.

There is another form of flatulence which I am sure is far more likely to be benefited by feeding than by starving and that is the flatulence of elderly people which comes on in the earlier hours of the morning, especially in those who take very little solid food after midday. Next to flatulence loss of appetite is perhaps the most important of the disturbances which I have mentioned as being referred to the stomach. I sometimes think that we fail to recognise the full significance of an enduring impairment or loss of appetite. A good appetite is just as sure an index of a normal state of health as a normal pulse, a normal temperature, and a normal respiration-rate, but because we cannot record it in figures upon a chart we are likely to forget it, but without it, it need hardly be said, health cannot be long secure. I do not think dyspeptics, in the sense in which we ought to use the term, suffer much from want of appetite. Any serious and abiding impairment of appetite usually means serious disease in the stomach or elsewhere. How rare a thing is pure functional anorexia ("anorexia nervosa") in the experience of any of us and

how common is the complaint of loss of appetite! The chronic alcoholic has a poor appetite, especially in the morning, but he is suffering from chronic gastritis or hepatic cirrhosis—i.e., organic disease. How many and fatal mistakes have arisen from a belief in an idiopathic gastritis or a gastritis due to the ingestion of ordinary articles of diet? It is not so many years since a boy was admitted to the General Infirmary at Leeds suffering from a fatal peritonitis which was gravely attributed to the eating of two green apples and the post-mortem examination revealed a strangulated retro-peritoneal hernia.

My contention is, then, that primary functional disorders of the stomach, worthy to be ranked as diseases requiring much thought and care on our part, are comparatively rare and that when we are confronted with persistent gastric disturbances, however trivial in character they may appear to be, the possibility of their being due to organic disease in the stomach or to disease outside the stomach rather than to a purely functional disturbance in the stomach should be ever present in our minds. How often has it happened to many of us to make a diagnosis of dyspepsia when the event has shown that we ought to have detected organic disease in the stomach itself or some other disease such as Bright's disease, cardiac disease, blood disorder, lead poisoning, diabetes, tabes, malignant disease of the liver, cerebral tumour, or pulmonary tuberculosis, not to mention pregnancy and neurasthenia. One of the gravest errors we ever make in respect of this matter is to believe that repeated vomiting is due to dyspepsia.

The surgeon not infrequently seems to speak in a reproachful manner of the physician's inability to recognise with certainty grave organic disease in the stomach in its early stages and we shall readily admit that a trustworthy diagnosis of carcinoma ventriculi, for instance, in its very beginnings is a matter of the extremest difficulty, and it cannot but be helpful to us if we can legitimately hold a strong reservation against the probability of functional disease. I have already said that I regard careful physical examination of the abdomen and of all other regions of the body as of paramount value in the explanation of stomach symptoms. Dr. Hutchison, in a recent address on dyspepsia, has expressed his regret that investigations by means of test meals and the use of the stomach-tube have not as yet become popular in this country in the diagnosis of stomach disorders. I think it may safely be said that if such methods of investigation had been shown by those who use them most to be of any real value in doubtful cases they would long before this have been in the hands of all of us. My own experience of them leads me to say that I have not found them to be of service in any case where a differential diagnosis of organic and functional disease could not be made by simpler, more trustworthy, and more convenient means. No one, I imagine, would condemn any patient to cancer, or even ulcer, of the stomach on a chemical examination of the contents of the stomach alone. Such investigations can only afford us confirmation of opinions already arrived at by the simpler method of diagnosis. If a careful consideration of the symptoms, physical signs, and effects of treatment does not enable us to arrive at a decision in any case where the question of malignant disease is seriously raised, the only trustworthy method open to us is exploratory incision of the abdomen. The good effects of rest in bed, suitable food, and the use of simple drugs such as laxatives and sedatives are to be observed in almost all cases of organic disease of the stomach, malignant or not; indeed, nothing is more impressive, I think, than the prompt relief which confinement to bed brings to all forms of vomiting due to mechanical causes—even cancer.

This therapeutic test, as it might be called, is not always to be relied upon, for one sees not infrequently a marked remission of symptoms and an improvement in health in cases of obvious malignant disease under treatment by rest and suitable feeding. The earliest stages of malignant disease we can never hope to detect except by direct inspection of the stomach. Even then errors are unavoidable, for have not most of us seen cases in which the surgeon has declared the lesion at the time of operation to be malignant and the event has shown it not to be so? My experience of this kind of thing has so much impressed me that I have made it a rule to urge abdominal section in all cases where a lump is to be felt in connexion with the stomach.

Having done what in me lies to show that any functional disorder of the stomach which can safely and truly be designated dyspepsia is probably a negligible quantity in gastric disorders, it is necessary that I should briefly refer to the concrete and definite functional disorders which are described by writers on these matters. Such disorders undoubtedly exist but I submit that they are great rarities. In the first place, a word about motor neuroses of the stomach. Many motor neuroses are described such as "hypermotility," "peristaltic unrest," and spasms and insufficiencies of the orifices—all these are probably purely hypothetical conditions apart from organic disease, but atony and atonic dilatation demand some attention. At one time I was a firm believer in what is called primary simple or atonic dilatation of the stomach, meaning by that a dilatation which could be demonstrated and which produced symptoms, notably chronic vomiting, and which was curable by washing out the stomach, rest in bed, and a suitable diet. Professor T. Clifford Allbutt has done much to secure the recognition of this condition in this country and it was through him that I became a believer in a dilatation of the stomach which was independent of pyloric obstruction or any other gross mechanical condition. Time and a more extended experience have led me to abandon, perhaps not entirely, this idea and I now hold that any dilatation of the stomach which can be demonstrated by physical signs and which is giving rise to vomiting is almost always due to pyloric obstruction. Many people have what may be called "splashy stomachs" at times but they are not necessarily dilated stomachs in a pathological sense.

Such definite conditions as gastro-succorrhœa, or Reichmann's disease, and gastroxynsis are, I am sure, very rare clinical conditions, and though many cases have been recorded, chiefly by continental writers, there is little or no reference to them in standard English works on medicine. Hyperchlorhydria, too, is, I believe, rare apart from gastric ulcer, in which it is readily recognised as a causative factor in the more serious anatomical lesion. Gastrodynia and gastralgia, pains referred to, but probably not residing in, the stomach are well recognised clinical conditions, but we hear of neither of them with anything like the frequency with which we hear of dyspepsia. There is one remarkable and distinguishing feature common to all these functional disorders of secretion and sensation and that is that all observers are agreed that they are best relieved by liberal feeding with solid food, especially proteids. Such articles of diet as veal, beefsteak, asparagus, black coffee, and Dutch cheese are included in Biedert and Langermann's diet table for patients with gastric hyperacidity.

And still my object this evening is not to persuade you that all diseases of the stomach of any importance can be cured only by surgical treatment. Many cases are still treated to a successful issue by the physician alone. It will be agreed at once that all cases in which a mechanical structural difficulty exists in the cavity or orifices of the stomach surgery offers the only hope of cure or permanent relief. In cancer of the stomach, wherever situated, operation affords the only means of permanent relief. Cases of chronic inveterate recurrent or multiple ulcer, with or without hæmatemesis, should, when medicinal treatment has failed after a reasonable and efficient trial, be treated by operation. Large numbers of cases of simple gastric ulcer in its less chronic form are treated successfully by rest in bed and ordinary medicinal and dietetic means. So are most cases of hæmatemesis due to gastric ulcer, and no case of simple ulcer should, in the first instance, be treated by operation, and in no case of first hæmatemesis is operation at once necessary or desirable. We can all call to mind many appalling cases of hæmatemesis in women which have recovered without operation and in which an operation at the moment could only have added to their danger. Hæmatemesis in men is so much more frequently due to duodenal than to gastric ulcer and duodenal ulcers so rarely heal without gastro-enterostomy that I always regard hæmatemesis in men as requiring much more serious consideration than in women. In any case of gastric ulcer, and especially in duodenal ulcer, in which vomiting persists and hæmatemesis is repeated after careful medicinal treatment, including long rest in bed, we should probably resort to operative treatment.

To my mind then, the indications for surgical treatment in stomach disorders are not difficult to determine and all cases which do not present those indications are to be left in the hands of the physician, and I think I cannot do better than bring this somewhat discursive paper to an end with a very few remarks upon the means other than surgical at our

disposal in the treatment of such disorders and here again I am afraid I shall be found in a somewhat negative or even destructive attitude.

In the treatment of all stomach disorders diet still holds the foremost place in the mind of the patient and frequently also in the mind of the practitioner. I believe in stomach disorders, as in most others, that the patient's appetite and his experience are his best guides and I am usually content with ordering such patients such articles of ordinary diet as they like and which they find agree with them. I very rarely prohibit meat, or cheese, or tea, or pastry of any kind, and if the patient likes pork and it agrees with him I ask him to take it. I usually prohibit all alcohol, as well as all what I may call manufactured non-alcoholic drinks, and I always enjoin the drinking of water in large quantities even at meals. The articles of diet against which I generally warn sufferers from gastric disorders (including ulcer of the stomach) are what are generally known as "slops," such as broth, soup, beef-tea, and porridge, raw eggs (and indeed uncooked food of all kinds), jellies and "messes" and second cooked things, and all foods out of bottles, tins, and boxes. I am sure dyspeptics are better without sugar and sweet things generally. I am constantly seeing people who cannot take milk in bulk and I think it is far from being an ideal food for adults either in disease or health. It is certainly no more digestible than meat and what are called milk diets by their bulk and insipidity are very soon distasteful to the patient. In the same way I find that well-made pastry frequently agrees much better than the bulky farinaceous puddings. Cold meat, boiled or roasted, can frequently be taken when hot meat disagrees. No case of gastric ulcer can, or should, be treated except in bed. I am accustomed even in this disorder to abstain from ordering milk diet. If there is great pain after food, especially if there is hæmatemesis, I prohibit all food and give only water, and plenty of it, by the mouth. I do not believe in rectal feeding; it is very distasteful and sometimes painful to the patient and it is of no real value. I have seen the most troublesome and offensive proctitis set up by nutrient suppositories. Many cases of hæmatemesis have been treated successfully in my beds by absolute rest and the administration of plain fresh water by the mouth and nothing else, unless a very little morphine is given, also by the mouth, to relieve pain and restlessness. I rarely use the so-called hæmostatics but in deference to public opinion I have occasionally ordered such inert substances as chloride of calcium to be given in large doses, also by the mouth, and I have occasionally used adrenalin which is a powerful and active substance and should be given with care.

Of the drugs in common use in stomach disorders laxatives occupy the first place in my estimation and of them I believe rhubarb is the best. Our old-fashioned rhubarb mixtures consisting of rhubarb, soda, and peppermint are excellent things taken after food for what we call the chronic, middle aged, constipated, flatulent dyspeptic. Most of the official preparations of rhubarb, including the powder, are too pungent and nauseating. I find the concentrated infusion most agreeable and efficient. I am one of those who believe that constipation is a real evil and cannot be treated too persistently, so long as it is treated intelligently. The salts of bismuth hold a deservedly high place in all painful and irritable conditions of the stomach, including ulcer, and, of course, cancer, but the old-fashioned bismuth mixtures are not nice things to take and I am glad to find that the practice of giving carbonate of bismuth in large doses simply stirred up in water is now very generally followed. I do not think that morphine is often necessary, except, of course, in the pains of cancer, and in that case any dose which is necessary to keep the patient at ease should be given ungrudgingly. If the bowels are kept acting daily by means of rhubarb and the kidneys are kept acting freely with water I am accustomed to give morphine in any dose that may be necessary. When large doses are required I prefer to give it by suppository. Such things as lactopeptin and taka-diastase and other artificial digesters are for the most part as expensive as they are useless and therefore unnecessary

May I remind you that one of the most striking things we see in hospital practice is the astonishingly simple diets and medicines with which we manage to deal with our patients, and I believe just as successfully as with the more varied and expensive foods and medicines which so many think necessary in private practice, and it is from hospital practice that I have learned to believe in the simple foods and medicines to which I have referred. I apply to the dietetic management of the stomach disorders the same rule which I ventured to advocate some years ago in the management of typhoid fever—viz., that no further restrictions in diet should be imposed than loss of appetite and impaired digestion indicate—that is, that the patient should take what he likes of ordinary articles of diet in so far as he knows they agree with him. Bulk is of much more consideration than kind in deciding what food should be given in gastric ulcer and all other stomach disorders.

In saying what I have said about food in stomach disorders I have not intended to shock what I know are the firmly held convictions of many whose authority to speak in these matters is far greater than mine. I have tried to tell you as clearly and as frankly as I could the methods which I constantly practise and which I constantly advocate and which I have no reason to believe have fallen seriously behind other and more orthodox methods in the measure of their success.

PNEUMOCOCCIC PERITONITIS IN CHILDREN: A STUDY.

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DURING the eight months in which we were working together at the East London Hospital for Children no less than four cases of peritonitis of the somewhat rare variety caused by the micrococcus lanceolatus came under our notice. The obscurity of the cases caused us to look up the literature on the subject, and the small number of cases reported in England and the slight attention which the condition has received in this country are our excuses for publishing the following account of the condition.

In 1885 da Bozzolo[1] described a case of infection of several serous cavities with numerous capsulated cocci in the exudate following on a nephritis. The case, however, was not fully worked out. In the following year Cornil[2] performed a necropsy on a case of pneumococcic peritonitis following pneumonia and associated with double empyema and pyopericarditis. During the next year or two isolated cases were here and there reported and in 1890 Nélaton[3] undertook the first operation for the relief of the condition in a woman, aged 32 years, but without success. Galliard[4] and Sevestre[5] also operated during the same year on cases of pneumococcic peritonitis, Sevestre's case being a child with apparently primary involvement of the peritoneum. This case recovered and remained well. On the continent numerous examples of the disease now began to be recorded, for the most part from France. In 1903 von Brunn[6] was able, in an excellent paper on the subject, to collect 57 cases of the disease in children and a further 15 adult cases. In the same year Jensen[7] of Copenhagen published a lengthy article on the disease and in this he discussed the affection very fully. These two papers are up to now the most important contributions to the subject. Since the date of von Brunn's paper, Matthews[8] and Bryant[9] have brought forward fresh cases and have written on pneumococcic peritonitis; other papers have been contributed by Quervain[10] and Ghon,[11] while cases have been reported by Panzacchi,[12] Brun,[13] Powell,[14] Taylor,[15] Waldo,[16]

[1] Da Bozzolo: Centralblatt für Klinische Medicine, 1885.
[2] Cornil: Journal des Connaissances Médicales Pratiques et de Pharmacologie, 1886.
[3] Nélaton: Bulletin Médical, 1890.
[4] Galliard: Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, 1890.
[5] Sevestre: Semaine Médicale, 1890.
[6] Von Brunn: Beiträge zur Klinischen Chirurgie, 1903, 29.
[7] Jensen: Archiv für Klinische Chirurgie, 1903, 70.
[8] Matthews: American Journal of the Medical Sciences, 1897, 113.
[9] Bryant: Brit. Med. Jour., vol. ii., 1901.
[10] Quervain: Centralblatt für Schweizer Ärzte, 1902.
[11] Ghon: Wiener Klinische Wochenschrift, 1904.
[12] Panzacchi: La Riforma Medica, 1904.
[13] Brun: La Presse Médicale, 1901.
[14] Powell: Brit. Med. Jour., vol. i., 1905.
[15] Taylor: Transactions of the Clinical Society of London, vol. xxxvii.
[16] Waldo: Brit. Med. Jour., vol. i., 1904.

Webber,[17] Fisher,[18] Dudgeon and Sargent,[19] Davies and Langdon Brown,[20] and Duckworth and Marsh.[21] As the result of a search of the literature we have been able to find records of 91 cases of pneumococcic peritonitis in children below the age of 15 years, including the cases reported above. The number of cases reported as occurring in adults is considerably less. The classification of these cases has been very difficult and not at all satisfactory, as in a very large number it is impossible with any certainty to decide as to which was the starting point of the infection. The question as to the possibility of infection taking place without the formation of a lesion at the point of entry of the micro-organism is of great importance in this connexion, and we believe that that possibility is now accepted. We decided to divide the cases into (1) those secondary to a definite pneumococcal infection of some other part of the body; (2) those in which the peritoneum was apparently the first point of attack of the organism; and (3) those in which owing to the rapid general spread of the infection it is impossible to decide as to which of the other groups they should fall under.

Of the 91 cases 30 fall under the first group, 47 into the second, and in 14 instances it is impossible to place the case into either of these groups. As an example of the last group we may relate shortly a case reported by Stoos.[22]

A girl, aged 11½ years, was suddenly seized with convulsions, vomiting, pain in the lower abdomen, and fever. Two days later there were rales and slight dulness at the left apex. On the next day the lower abdomen was swollen, and there were diarrhœa, herpes labialis, enlarged spleen, continued high temperature, and bad general condition. Acute gastro-enteritis was thought of, then typhoid fever, and finally tuberculous peritonitis. A large encysted abscess formed in the abdomen which was eventually incised (on the thirty-fourth day), and the patient in time recovered. In this case it seems to be impossible to determine the point of entry of the pneumococcus; there may have been pneumonia, or the peritoneum may have been infected from the bowel or in some other way. We have, therefore, on similar grounds, placed 14 of our 91 collected cases into the third group. Of the cases we report, Nos. 3, 4, 15, and 16 we regard as coming into our "primary" group, No. 8 into our "uncertain" group, and the remainder into our "secondary" group.

Etiology.—In discussing this question the primary and secondary cases must be considered separately and it seems advisable to discuss the latter first, as more is known of the method of spread of the pneumococcus to the peritoneum in this group, and the consideration of this will simplify the study of the etiology of the primary cases.

The secondary cases.—One of the most interesting and striking features brought out by a classification of the various primary lesions is the enormous preponderance of cases in which this lesion is pulmonary. We have collected 30 cases in which the peritonitis was definitely secondary in point of time, at least, to a lesion elsewhere, and in 22 of these cases (73 per cent.) this earlier lesion was in the lungs or pleuræ. The primary foci in the remaining eight cases were: in one case, the umbilicus; in two cases, sore-throat; in three cases, otitis media; and in two cases, intermuscular abscess not connected with bone (in the neighbourhood of the ankle and hip respectively). In the last seven of these cases the early focus was so far remote from the peritoneum as to make the blood stream the only possible path by which the pneumococcus reached the peritoneum. In four of these seven infection of several serous cavities occurred in each, affording additional evidence in favour of pneumococcic septicæmia. In the remaining case of extra-pulmonary origin the umbilicus was probably the source of infection; suppuration followed the detachment of the cord and peritonitis began shortly after. At the necropsy right-sided empyema was found. It is quite likely, though in the absence of blood cultures it cannot be proved, that the pleura was infected by the passage of the pneumococcus through the diaphragm with the lymph stream.

Much discussion has centred round the question as to whether in cases of pulmonary and pleural origin the peritoneum is infected through the blood stream or by penetration of the pneumococcus through the diaphragm.[23] It has now been definitely established that, in pneumonia in man, pneumococci can be grown from the blood in practically every case (Ewing). This is strong evidence in favour of the peritoneum being infected from the blood stream, so strong that only on the most conclusive proof can the occurrence of the alternative trans-diaphragmatic mode of infection be established. Some work of Burckhardt,[24] which bears on this subject, must be considered. In one case he examined the diaphragm microscopically and found pneumococci in the pleural serosa and subserosa, while they were absent in the deeper layers. In a second case the organisms were found in great numbers throughout the whole thickness of the diaphragm. This case, however, had endocarditis and abscess in the shoulder-joint and was obviously of septicæmic type; the diaphragm was probably invaded from the blood stream. Experiments on animals showed that to effect penetration of the diaphragm by organisms from the pleura, virulent cultures must be used and the endothelium of the pleura must first be destroyed by a chemical poison—e.g., oleum terebinthinæ. Even in these circumstances, however, no peritonitis resulted. It must be remembered that pneumococci passing through the diaphragm by way of the lymph channels must proceed against the current in these vessels. We consider that the present evidence in favour of such a path of infection, when placed in opposition to the fact of the presence of septicæmia in practically every case of pneumonia, cannot be held to be of any weight. Of our 22 cases of pulmonary origin, in four remote lesions occurred late (otitis media, arthritis); these must have been brought about by blood-borne organisms. In the remaining 18 there is no direct evidence as to the path of infection. In 11 cases out of 30, therefore (seven out of eight cases of extra-pulmonary origin and four out of 22 cases of pulmonary origin), the infection of the peritoneum from the blood is certain (37 per cent.); in the remaining 19 that mode of infection is most probable.

Primary cases.—One of the most likely channels through which the micro-organisms may gain access to the peritoneal cavity in these cases is the bowel. The Fallopian tubes must also be considered in the case of female patients; as regards other mucous membranes—e.g., the tonsils and the middle ear—it is conceivable that the pneumococcus might gain the blood stream through them without causing a local lesion, and then first attack the peritoneum, perhaps at the same time or later implicating the other serous cavities. We must now consider what evidence can be brought forward in favour of the view that the peritoneum became infected from the bowel in the 45 primary cases we have collected. From the clinical side there is the fact that in 35 out of the 45 cases the onset of the illness was a sudden pain in the abdomen, with vomiting or diarrhœa; in 26 out of the 35 cases both vomiting and diarrhœa were noted. In a very few cases there is some history of an indigestible meal. It is open to argument that the vomiting, &c., were due to the commencing peritonitis but the very frequent occurrence of an early diarrhœa points in favour of these symptoms being those of an enteritis, rapidly passing on to peritonitis. In the remaining ten cases the reports are for the most part defective; in two of them digestive disturbances are reported without being defined.

The necropsy results are very scanty and neither prove nor disprove the theory. Of the 21 primary cases with a fatal result, in 15 there is no report as to the condition of the mucous membrane of the intestine; of the remaining six, in four it is spoken of as being healthy and in two cases swelling of Peyer's patches is noted. A swollen patch cut and stained showed in one case pneumococci in the mucous membrane only; in the other case no organisms were found. Thorough investigation of the state of the bowel wall is much to be desired in future cases. There is now no doubt as to the occasional presence of the pneumococcus in the lumen of the bowel. Weichselbaum, Flexner, and other authorities have pronounced definitely as to its presence. Normally it is killed by the gastric juice but disordered digestion, with marked reduction of the acidity of the gastric juice, no doubt enables the organism to reach the small gut. In adults numerous cases of enteritis due to the pneumococcus, in some instances associated with peritonitis and in others not, have been recorded, and there seems no reason

[17] Webber: Brit. Med. Jour., vol. ii., 1904.
[18] Fisher: THE LANCET, Nov. 10th, 1900, p. 1584.
[19] Dudgeon and Sargent: THE LANCET, Feb. 25th (p. 473) and March 4th (p. 548) and 11th (p. 617), 1905.
[20] Davies and Langdon Brown: THE LANCET, Oct. 8th, 1904, p. 1017.
[21] Duckworth and Marsh: Transactions of the Clinical Society of London, vol. xxxvii.
[22] Stoos: Jahrbuch für Kinderheilkunde, 1902.
[23] Michaut: Gazette des Hôpitaux, 1901.
[24] Burckhardt: Beiträge zur Klinischen Chirurgie, 30, 1901.

why the same lesion may not occur in the case of children. Indeed, Jensen[25] speaks of two cases in children (he does not describe the cases fully and they are therefore not included in our statistics), one of membranous enteritis and diffuse pneumococcic peritonitis and the other of catarrh of the colon with diffuse peritonitis. Stoos[26] describes a case as proving infection from the bowel, but von Brunn thinks that the evidence is not conclusive. There was general fibrinous peritonitis, the solitary follicles and Peyer's patches were much swollen, the mucous membranes over them were necrotic, and the submucosa and serosa were much infiltrated. Bacilli and numerous diplococci were found throughout the whole thickness of the bowel wall and in the fibrinous peritoneal exudate. The bowel contained extraordinary numbers of diplococci, for the most part capsulated. No cultures were made. Von Brunn, on account of there being no evidence of reaction to the organism in the muscular layer, thinks that a post-mortem invasion is not excluded. Jensen made some experiments with a view to find support for the theory of bowel infection of the peritoneum in these cases. Two young mice and two young rabbits were each given through the mouth ten cubic centimetres of a highly virulent culture of pneumococci. One rabbit got diarrhœa, wasted, and died in four days. General fibrino-purulent peritonitis was found; the gut was strongly injected. There was no ulceration but the Peyer's patches were necrotic. Pneumococci were found in pure culture throughout the body and diffused through the gut wall. As the animal did not show symptoms of septicæmia he concludes that the general infection was late and that the peritoneum had become infected directly from the gut.

It is very likely that in some cases appendicitis is the starting point of the peritonitis. This method of origin is more particularly found in adults and a considerable number of these cases have been reported. In children definite evidence of appendicitis is rare. In a case recorded by Quervain[27] an encapsulated hypogastric abscess was opened and the pus contained pure pneumococci. Five months later an appendectomy was performed and pneumococci and other organisms were found in the lumen of the appendix. The wall of the appendix was normal and contained no organisms. Krogius, quoted by Quervain,[28] had a case—a girl, aged 14 years—of pneumococcic peritonitis in which the appendix was obliterated in the middle and perforated at the tip. He considered it likely that a pneumococcal appendicitis was the primary lesion. In none of the 21 primary fatal cases we have collected is there any mention of a diseased appendix; in the 24 cases which recovered the appendix was not seen. While admitting, therefore, that the appendix is the starting point of the peritonitis in a few cases we cannot endorse the view of Quervain who thinks that an affection of this organ is the commonest cause of pneumococcic peritonitis in these "primary" cases. Whether the pneumococci reach the peritoneum by traversing the gut wall or are taken up into the blood stream after penetrating the mucosa and thence gain the peritoneum we have no means of judging. The pathological evidence is *nil* and the experimental doubtful; apparently Jensen's experiment referred to above is the only one on the subject.

When considering the female genitalia as the starting point of the peritonitis in these cases mention must first be made of the sex incidence of the disease. Of all the cases females were affected in 73 per cent. and males in 26 per cent; of the primary cases females in 84 per cent. and males in 16 per cent.; and of the secondary cases females in 67 per cent. and males in 33 per cent. It is very difficult to account for these figures. Brun, quoted by von Brunn,[29] ascribed a great rôle to the female genitalia as a portal of entry to the peritoneum for the pneumococci, relying on figures very similar to those given here. But of pathological support to this theory there is practically none. In two cases a congested tube was found; in a case recorded by Dudgeon and Sargent[30] pyometra was present with gonococci but no pneumococci in the pus. Slight vulvitis was present in one case and slight vaginitis in another. In the remaining cases the genital organs were normal. In the secondary cases, too, the same preponderance of females, slightly less marked, is found. In these cases the lungs are by far the commonest seat of the primary lesion and the female genitalia can have nothing to do with the pneumonia. One must suppose that when a larger number of cases are reported this apparent excess of females affected will disappear. The remaining possible explanation of the occurrence of the primary peritoneal affection is that pneumococci have been absorbed through an apparently intact mucous membrane, septicæmia has occurred, and the cocci in the blood have found in the peritoneum a favourable situation for growth. With our present knowledge an opinion on the point cannot be given. It is now certain that in practically every case of pneumonia the pneumococcus is present in the blood stream. At what stage in the onset or course of the disease the organism gains the blood is not known. It is possible that in some cases the lungs may be infected by the blood stream and not *vice versâ*, and if this be so the peritoneum may be in other cases a more favourable situation for the growth of the pneumococcus and the effect of the infection may be first manifested there.

Clinical characters.—In dealing with the clinical manifestations of the disease we are constrained to rely to a very great extent upon the analyses of the cases published by different writers and particularly to the writings of von Brunn and Jensen referred to above. Two of our own four cases were cases of primary peritoneal infection, these being Nos. 3 and 4. In the first of these cases a baby one month old was brought to hospital with a history of an acute onset of illness, the only symptoms being vomiting, followed a day later by diarrhœa and abdominal distension. These two symptoms persisted up to the time of death. The second case was complicated by the presence of renal disease, on which it appears the peritonitis was superadded as a terminal affection, and the only symptom of the latter was the presence of persistent abdominal pain. Of the other two cases which we ourselves saw the first is one of those cases of general pneumococcal infection with multiple local lesions, the signs of peritonitis being quite obscured by the extreme prostration and the severe thoracic infection. In the second case we have the picture of the onset of the peritonitis scarcely masked by an intermuscular abscess about the hip, and here again the symptoms noted in the first acute primary case were present—viz., vomiting and diarrhœa.

Two types of the disease have been separated on a pathological basis, the circumscribed and the diffuse, and a clinical entity given to each. This classification will be adhered to in our account, although it may be said that the difference of type is only one of degree. The circumscribed affection sets in acutely but soon passes into a chronic stage, in which the pus becomes encapsuled, marked by the mildness of symptoms. In the diffuse variety, on the other hand, no localisation of the pus takes place and it is noticeable for the violence and persistence of the symptoms. These two classes are further capable of division into primary and secondary groups, depending upon a previous absence or presence of a primary local infection elsewhere in the body.

Primary circumscribed pneumococcic peritonitis has three phases. Michaut[31] described these tersely as (1) the meteoric; (2) the exudative; and (3) the perforative. The first phase is characterised by the acute onset in what has usually up to then been a quite healthy child of acute abdominal pain which may begin locally but usually spreads rapidly over the whole abdomen. With the pain comes vomiting which may only last for 12 hours but sometimes persists for days, according to Jensen for not more than six. The diarrhœa, practically always present, is severe and more persistent and may last all through this first stage. Fever is not, as a rule, very high and usually falls about the tenth day. The pulse curve corresponds to the fever curve. In short, the cardinal symptoms of the onset of pneumococcal peritonitis are these: severe abdominal pain, vomiting, diarrhœa, and fever. Albuminuria may occur but is uncommon. This first phase lasts from 10 to 14 days. The second phase is that of exudation into the peritoneal cavity with the formation of a local abscess. It is characterised by the signs of slow formation of fluid without marked pain, tenderness, or discomfort. Jensen[32] drew an analogy with the formation of an empyema following the acute pleurisy of a pneumonia, while Lennander calls the condition "abdominal empyema." The encapsulation is first manifested by local swelling and dulness and on palpation there is usually some tenderness unassociated with muscular rigidity.

The situation of the abscess is usually sub-umbilical and placed rather laterally than mesially. If untreated it usually, in time, completely fills the abdomen, but in the

[25] Loc. cit. [26] Loc. cit. [27] Loc. cit.
[28] Ibid. [29] Loc. cit. [30] Loc. cit.
[31] Loc. cit. [32] Loc. cit.

epigastrium the stomach resonance may practically always be elicited, even with the most advanced distension. With great swelling of the abdomen the veins on its surface may become prominent. During this stage the temperature is slightly elevated, the diarrhœa has ceased, and constipation may be present. Vomiting is uncommon. The patient usually wastes and in advanced cases the abdominal distension may offer a marked contrast to the general emaciation. On the other hand, the general condition sometimes remains good. The third phase is only present if surgical intervention has not been attempted or allowed and depends upon the natural endeavour to evacuate the abscess. This usually points about one month from the commencement of the illness and in most cases by this time the child is gravely ill, the cachectic appearance and distended abdomen often suggesting advanced tuberculous peritonitis. The usual site of perforation is the umbilicus. Jensen states that in 25 cases of capsulated peritonitis perforation at the umbilicus occurred in seven and of eight similar cases following pneumonia the site of perforation was the same place in six. Perforation at other sites is rare, but the pus has been described as escaping through the vagina in several cases and through the bladder once.

After spontaneous evacuation a cure may result, but more commonly there is some retention of pus and the abscess has to be thoroughly opened and drained. Von Brunn emphasises the diagnostic significance of spontaneous fistula formation at the umbilicus: "It is so frequently an occurrence in pneumococcal peritonitis as to be one of the most characteristic features. If, after symptoms of an acute peritonitis in a child, a discharge of pus occurs from the umbilicus, pneumococcal peritonitis must be thought of first of all." With regard to the other signs and symptoms during this phase the temperature is usually low, œdema of the legs may occur, while vomiting and diarrhœa are absent; there may be signs of pressure, especially on the pelvic viscera. Von Brunn states that in his first case interference was decided against on the surgical side on account of the absence of fever. Our 91 collected cases include 26 cases of the primary circumscribed variety.

Passing on to secondary circumscribed pneumococcic peritonitis, it may be said that the signs and symptoms vary in their intensity and diagnostic clearness, according as the peritonitis sets in immediately after the onset of the primary manifestation or some days later. Among our 91 collected cases there are 11 cases belonging to this class. Of these 11 the first stage was unrecognisable in no less that seven (64 per cent.) owing to the peritonitis setting in very shortly after the onset of the primary affection which in six of the seven cases was either pneumonia or broncho-pneumonia, and in the seventh case an arthritis. In another case the first stage was also missed, although the primary affection was apparently less severe, being a peri-articular abscess followed by the involvement of the joint. It may be pointed out, however, that to speak of the primary lesion being less severe may not be quite accurate, since in some of the cases at least the primary affection may be merely the first local manifestation of what is in truth a pneumococcal septicæmia. This general infection may in its severity be quite sufficient to mask to a greater or lesser extent the symptoms of the onset of the peritonitis. Of the remaining three cases (27 per cent.), in one the primary affection was pleurisy unaccompanied by pneumonia, the onset of peritonitis being well marked with pain, vomiting, and diarrhœa; in the other two there were broncho-pneumonia and pneumonia respectively as the primary lesions. An interval of some days elapsed and was followed by all the signs of an acute peritonitis. It follows from this masking of the acute symptoms that the majority of these cases were only recognised during the second or third stages which are the same as in the primary form and require no further mention.

Primary diffuse pneumococcic peritonitis is characterised by the acuteness of the onset, the severity of the symptoms, the rapid prostration of the patient, and in most instances his early death. In most of the cases reported its severity and early fatal result make it comparable with a perforative peritonitis. As mentioned above, the symptoms are those of the first or acute stage of the encapsuled variety but differ in their great virulence and persistence until the patient's death if no attempt be made to relieve the condition by laparotomy. Intense pain, vomiting, and diarrhœa set in suddenly, rapidly prostrating the patient, so that he speedily acquires the abdominal facies, with dry tongue, sordes, delirium, cold extremities, and cyanosis. The temperature varies between 100° and 102° F. and the pulse between 140 and 160. If no relief be afforded death soon follows. Of the 91 cases which we have collected 21 were of this primary diffuse form, including Nos. 4 and 16 of our cases.

Secondary diffuse pneumococcic peritonitis was present in 19 out of our 91 cases. Jensen, on the other hand, only found it once in 58 cases. Of these 19 cases the signs and symptoms pointed so strongly to the presence of peritonitis in five that an operation was performed. Of the remaining 14 in four there was strong evidence of the presence of peritonitis but as no operation was performed it must be allowed that the evidence was not sufficiently strong to warrant surgical interference. In three there were signs or symptoms pointing to abdominal infection but these were not sufficient to permit a diagnosis of peritonitis. In two there was no evidence of peritonitis before death, whilst in five either there is no clinical history supplied (2) or no reference has been made to the condition of the abdomen (3).

From this abstract of the 19 cases it will be noted that, as might be expected, when the secondary peritonitis is of the diffuse variety it gives definite early signs of its presence in a much greater proportion of cases than when it is localised—namely, in nine of the 19 cases (47 per cent.). As further bearing on this matter it may be noted that amongst the 19 cases pericarditis was present five times, never as the only other local infection, but always in association with pneumonia, broncho-pneumonia, or empyema. It may be said, in fact, that the presence of pericarditis is a sign of a severe general infection (septicæmia) and is associated with the most grave symptoms. Hence it is worthy of note that in the five cases where pericarditis was present at the post-mortem examination no mention is made of signs or symptoms pointing to peritonitis save distension of the abdomen in one case; indeed, in three of the cases it is definitely stated that no clinical evidence of peritonitis was forthcoming. We consider that this evidence corroborates the view that in the severe septicæmic type of case the local manifestations are obscured to such an extent as to prevent their recognition clinically. When peritonitis has been diagnosed the symptoms have been for the most part the same as those of the primary form, acute abdominal pain, sickness, diarrhœa, and abdominal distension. The antecedent lesion in these cases was single in ten and multiple in nine. In addition to four cases in which pleurisy or empyema occurred as the only lesion found post mortem accompanying the peritonitis the latter was also present in conjunction with other local lesions in eight cases and was nearly three times as frequent as any other local primary manifestation.

Pathological anatomy.—Jensen epitomises the action of the pneumococcus by saying "it is pus-forming and fibrinogenous." Our own experience is all in favour of this statement and a reference to the conditions found at the post-mortem examinations in our own cases will bear this out. The pus, provided that no post-mortem infection from the intestine with bacillus coli has occurred, is odourless. Its fibrinous character is shown by the layer of lymph on the wall of the cavity and by the presence of jelly-like masses in the pus, this last appearance being due to an intimate mixture of the purulent and fibrinous elements of the exudate. The fibrinous layer covering the surface may appear simply as a layer of lymph, dull and whitish-grey, or, by the presence of pus in and between its layers, it may assume the form of a yellowish or greenish yellow gelatinous membrane which may usually be peeled away from the lining wall of the cavity. Sometimes it may be hæmorrhagic in character. Similarly, the main collection of pus, which is thick and yellow, or greenish yellow, may have floating in it the jelly-like masses mentioned, or flakes of lymph or hæmorrhagic masses, the last being due to the presence of blood between layers of fibrin. The above is the typical picture but in exceptional cases misleading characters may be found. In cases where the post-mortem examination has been deferred for more than 24 hours the exudate may be evil-smelling owing to post-mortem contamination. This was so in Case No. 4, reported below. In another case "the abdomen was full of thin, yellowish-brown pus which poured out as soon as it was opened" (Case 3). In both these cases, however, there was a very pronounced fibrinous element, and so constant is this character, so much a part of the action of the pneumococcus in a serous cavity, that Jensen has stated that the diagnosis can always be made on macroscopical examination of the pus.

The conditions found in the abdomen vary according as the peritonitis is diffuse or encapsuled. We can only speak from experience of the diffuse variety but give a synopsis of the accounts of other observers of the encapsuled variety. The local pneumococcic peritonitis of children, "the abdominal empyema" of Lennander, is usually subumbilical and rather more to one side than the other. Its limitations depend upon the early deposit of lymph shutting off the main part of the cavity of the abdomen. There may be more than one abscess. In a case given by Galliard[33] one abscess lay between the liver and diaphragm and another one was situated around the spleen. Again, in Sevestre's[34] case one abscess was localised to the true pelvis and another to the cæcal region. If very large the abscess may fill the whole abdomen. In the first case given by von Brunn in his paper a large abscess had been opened, the pus pouring out under great pressure. He goes on to say, "the whole abdomen formed a huge abscess cavity in which the bowels, rolled into a little ball, lay almost like a foreign body. Liver, stomach, transverse colon, omentum, and coils of small intestine were all stuck together and lay in a mass as large as a man's head on the middle of the vertebral column." This is an extreme case. The serous membrane in these cases is injected, dulled, thickened, and covered to a varying extent with fibrin. Jensen believes that the encapsuled abscess begins as a diffuse peritonitis and its localisation depends upon early limitation by fibrinous exudate. Diffuse pneumococcic peritonitis was found post mortem in all our cases. A reference to Case 2 will supply the reader with a very good idea of the condition found in this variety. The condition of the serous surface varies with the length of time the abdomen has been infected. Exudation is usually rapid and deposit of fibrin takes place early. Although speaking from a very limited experience we believe that pronounced injection of the serous membrane does not take place early.

Passing on to the condition of the viscera we note that in none of our cases was any macroscopic lesion of the stomach or bowel found. The intestines, including the appendix, were carefully examined in all but with a completely negative result. In two cases some enlargement of Peyer's patches was found. In each a single Peyer's patch was removed and a portion of the spleen at the same time. These were microscopically examined for organisms. One proved entirely negative but in the other Gram-positive diplococci morphologically identical with the pneumococcus were found both in the Peyer's patch and in the spleen. It must be clearly noted that in this case there was no trace of ulceration, the mucous membrane was not notably injected, and the organisms which we look upon as pneumococci were not found deeper than the mucous membrane of the Peyer's patch.

On leaving this division of the subject a few lines may be written upon the bacteriology of the cases we report. In two of our cases (Nos. 1 and 3) we relied upon the presence of Gram-positive diplococci, either alone or in chains, scattered in large numbers throughout the pus, this diplococcus being morphologically identical with the pneumococcus. In one of these cases the pneumococcus had already been grown from pus taken from the pleural cavity (Case 1). In another case (Case 2) we added to the evidence supplied by the examination of the pus the further proof mentioned above—namely, the presence of pneumococci in the spleen and a Peyer's patch. In Case 4 we cultivated from the blood, growing a Gram-positive diplococcus morphologically identical with the pneumococcus. Dr. J. W. H. Eyre, bacteriologist to Guy's Hospital, kindly examined this culture for us and stated that it gave a typical growth on blood agar but that inoculation into a rabbit did not kill the animal. Of our other cases quoted at the end of this paper, in seven the proof was either the presence of the pneumococcus in cultures from the blood or its presence in the peritoneal pus. In the other five the evidence is indirect, pneumococci being found in pus from an empyema or pyopericardium, and as macroscopically the peritoneal pus was similar in nature the conclusion was drawn that the same organism was the cause of the abdominal pus.

Diagnosis.—Michaut[35] has stated that whereas the diagnosis has frequently been made in the encysted form it has only once been made in the diffuse form. This statement is set down as an appropriate introduction to the discussion of diagnosis, since in most cases encysted peritonitis can be diagnosed, whilst the diffuse may, and probably in the majority of cases will continue to be, extremely difficult if not impossible to diagnose correctly. The importance of the history is very great in many of these cases. This may be of the greatest diagnostic value, or its true meaning may only be recognised after the event. Experience has shown how obscure pneumonia may be in some cases, much more so a tonsillitis or conjunctivitis due to the pneumococcus. We recently saw a case of fever lasting over a week and falling by crisis, in which all the pulmonary signs recognised by skilled observers pointed to diffuse bronchitis only. Typhoid fever was thought of, but Widal's reaction proved negative. After the fall of temperature the patient expectorated a muco-pus which was examined for tubercle bacilli; these were absent but numerous bacilli and diplococci were present. The diplococci were Gram-positive and morphologically identical with the pneumococcus and we are of the opinion that what might have been a very obscure case but for this examination was a case of central pneumonia giving practically no physical signs of consolidation. This case occurred in an adult, but similar cases occur more frequently in children and we are inclined to look upon "cough and fever" preceding pneumococcic peritonitis as being highly suggestive of a previous pulmonary infection. In this connexion we may call attention to the second of our own cases where the boy had an abscess about the hip. This abscess was opened but unfortunately no bacteriological examination made of the pus. Looking back now on the case we consider that this inter-muscular abscess was the primary lesion and would emphasise the importance of a bacteriological examination in such cases. At a later date a baby was admitted into the Children's Hospital at Shadwell with several superficial abscesses which were opened. An examination of the pus showed the presence of pneumococci and we therefore drew off a sample of the blood from the median basilic vein and on blood serum pneumococci grew in pure culture. We would lay special stress on history in these cases and as being especially valuable when forthcoming in a case of acute peritonitis setting in suddenly and in an apparently previously healthy child. When the difficulty of diagnosis is considered and the heavy mortality necessarily resulting, no clue, however slight, can be disregarded.

The localised form of peritonitis will, as Michaut says, be diagnosed, since sooner or later an abdominal abscess will form, but unless the history of the acute attack or, in some cases, of a preceding pneumococcic affection elsewhere is obtained the diagnosis of the abscess may not be made until it is on the point of bursting at the umbilicus. This is unsatisfactory, for it means that the child has been subjected to a continued infection for a long period, at times up to a month and in many cases is in a weak and emaciated condition before the surgeon operates. The diagnosis should be made, if possible, and the condition relieved during the acute stage or during the early part of the quiescent period. The cardinal symptoms to rely upon are the acute onset of the vomiting and diarrhœa and abdominal pain, associated with a sudden rise of temperature. Herpes labialis appears to be so uncommon that its absence is quite unimportant, but it has occurred in a few cases. This local form of the disease has to be diagnosed from other forms of peritonitis, including that following appendicitis, from typhoid fever, and in its second and third stages, from tuberculous peritonitis.

From other forms of peritonitis which, save for that arising primarily from the appendix, are uncommon there will be great difficulty in diagnosis in the absence of any history. The same may be said with regard to the diagnosis from appendicitis, since the pain is chiefly in the right iliac fossa in many of these cases, while in many cases of appendicitis, especially in the early stages, the pain is not localised. Further, in very young children knowledge as to the situation of the pain is often unobtainable. In many such cases operation will be withheld and expectant treatment adopted. It is of importance that in such cases the second period should not be missed but the abscess formation treated as soon as recognisable. From typhoid fever the diagnosis may prove difficult if diarrhœa persists after the vomiting has ceased and the temperature remains raised. The absence of the rash and of splenic enlargement, the presence of a leucocytosis as opposed to a leucopenia, and the fact that a Widal examination proves negative, are all points against the illness being typhoid fever. There can be no doubt that in the past

[33] Loc. cit. [34] Loc. cit. [35] Loc. cit.

many cases of encysted pneumococcal pus have been looked upon as cases of tuberculous peritonitis. It is somewhat remarkable that on looking through the reports of cases at the East London Hospital for Children for the last ten years not a single case of intraperitoneal abscess due to the pneumococcus, operated upon and cured, has been recorded as such. We are of the opinion that such cases must have been treated but, the pus being looked upon as tuberculous, no bacteriological examination was made. There can be little doubt that in the later stages, when the child is very emaciated, the appearance is almost typical of tuberculous peritonitis. As points in diagnosis von Brunn calls attention to the importance of a history of the acute stage and the fact that in tuberculous peritonitis masses can be felt which are absent in the pneumococcal form. In the chronic stages he says only puncture can decide the question.

The diffuse form of pneumococcal peritonitis has to be diagnosed from a severe and acute attack of typhoid fever and from peritonitis following perforation of a viscus. The same emphasis may be laid on the importance of history in this form as in the local, but with the primary form there is little doubt but that in most cases the diagnosis will be next to impossible. We have no statistics at hand with regard to the relative frequency of acute diffuse peritonitis due to the pneumococcus and that due to perforations of the bowel. Such figures will no doubt be supplied in the future and prove valuable. For the present we can only say that as the commonest causes of acute perforative peritonitis in children appear to be perforation of the appendix and typhoid and tuberculous ulcerations of the bowel, in the absence of any history one of these conditions will still be diagnosed, but that if the peritonitis is recognised and an operation follow the character of the pus should lead to a diagnosis in most cases at once. Jensen in his paper states that of 16 cases of operation on the diffuse form eight were operated on for appendicitis.

Prognosis.—It appears to us on looking through the collected cases that prognosis depends on three factors: (1) whether the peritonitis is local or diffuse; (2) whether an operation is or is not performed and, if performed, whether or not at a suitable time; and (3) the previous presence or the onset of a severe complication. Whether the peritonitis is primary or secondary, providing there is no other complication, does not appear to affect the prognosis to any material extent according to our table. The following is the table which speaks for itself:—

Variety of peritonitis.	Number of cases.	Number of cases operated on.	Number of cases not operated on.	Result.		
				Recovery.	Death.	Uncertain.
Primary local	26	26	0	22	3	1
Secondary local ...	11	10	1	9	1	1
Primary diffuse ...	21	10	11	2	19	0
Secondary diffuse ...	19	5	14	3	16	0
Origin uncertain: local ...	8	8	0	6	2	0
Origin uncertain: diffuse ...	6	3	3	1	5	0
Total	91	62	29	43	46	2

45 of the 91 cases had encysted peritonitis, of which 44 were operated on, and of these 37 recovered and six died; in two the result is uncertain. The other 46 cases were of the diffuse variety, of which 18 underwent operation. Of the 18 cases operated on six, or 33·3 per cent., recovered, whereas all those not operated on died. The one case of the local variety not operated on recovered by spontaneous evacuation of the pus. The above table shows that recovery occurred in 86 per cent. of those with the encysted form, whilst only 14 per cent. of the cases with the diffuse variety survived.

Treatment.—In dealing with treatment we shall be very brief, simply giving the conclusions arrived at by a study of the cases reported and a consideration of the pathological condition found at post-mortem examinations. There can be no doubt but that when once pneumococcal peritonitis has been diagnosed a laparotomy should be performed. Jensen says, "Operate before a distinct abscess has formed," but acknowledges that the early stages may be very difficult to diagnose. Remembering, however, that there is an acute stage in localised pneumococcal peritonitis in which the indications for operation may not be strong enough to lead to immediate intervention, it may be hoped that in the future such cases may be watched and the persistence of fever, of some abdominal tenderness, and perhaps diarrhœa, may lead to an earlier diagnosis of the condition and earlier operation. At operation the cause of the peritonitis may, in the great majority of cases, be recognised by the character of the pus, non-odorous, greenish, and fibrinous. It is sufficient in the localised form to treat the abscess in the simplest way, inserting a large drain and allowing it to heal from the bottom. With the largest of abscesses there is no trouble. In the acute diffuse form the abdomen will be opened in many cases for peritonitis of unknown cause. The character of the pus should make the diagnosis clear. It is as yet impossible to advise any exact line of treatment but, if the pus is not evil-smelling, mopping out the cavity and closing it without drainage would appear to be the wisest course. In the event of the pus being foul-smelling from infection with bacillus coli the perforation of some viscus would suggest itself and this would resolve the treatment into that special to perforative peritonitis.

Summary.—1. Pneumococcic peritonitis is a comparatively rare disease in children but in the past many cases have not been recognised. 2. It is in about a third of the cases secondary to some remote pneumococcal lesion; of these affections of the lungs and pleuræ are by far the commonest, the middle ear being the next most common site. The infection is carried to the peritoneum in the blood stream. 3. In the remaining two-thirds the peritoneum is probably infected from the bowel in the vast majority. No microscopic lesion is, as a rule, found. 4. In half the cases the pus is encysted; in these the diagnosis is fairly easy, the prognosis is good, and the treatment is laparotomy and drainage. 5. In the other half of the cases the peritonitis is diffuse, the diagnosis is very difficult, and the prognosis very gloomy. The treatment is laparotomy. 6. The pathological appearances are characteristic.

The cases which we personally observed and for permission to publish which we are indebted to the medical and surgical staff of the East London Hospital for Children were as follows:—

CASE 1.—A boy, aged four years, was brought to the hospital in March, 1905, with the history that seven weeks before he had had tonsillitis, followed by pneumonia. This got better after 14 days, but on the sixteenth day he had a relapse. He had since been getting worse and latterly had had some pain in the chest and abdomen. The boy on admission was pale and thin and had great dyspnœa. The left chest was obviously full of fluid and a piece of rib was resected, a pint of pus, creamy and odourless, escaping. Great improvement in the boy's condition followed the operation. During the next week the temperature was irregular, occasionally reaching 101° F. at night. On the ninth day after admission he was worse and suddenly became very collapsed, but revived on receiving stimulants. On the eleventh day he had two similar attacks. There were slight impairment of resonance and deficient breath sounds at the right base and the general condition was worse. During all this time the empyema which had been opened was draining well. On the thirteenth day the breath sounds at the right base were stronger and the general condition was unchanged. On the fifteenth day the patient looked much worse. The right limit of cardiac dulness, which had been extended to the right by the fluid in the left chest and had never recovered its normal position, was two inches from the right edge of the sternum and there were marked dulness and resistance at the right base behind. The question arose as to whether there was a right-sided empyema or a purulent pericarditis. The child died before the arrival of the visiting physician.

At the necropsy the right pleural cavity was found to be obliterated, save for a small pocket behind and at the base which contained from one to two ounces of thick greenish pus. The left empyema had been drained perfectly. There were firm adhesions between the pleural and pericardial surfaces. Pyopericarditis was present, with a thick layer of lymph on both visceral and parietal surfaces. The mitral valve showed old endocarditis. There was myocardial degeneration. On opening the abdomen general diffuse peritonitis was found. There was a pocket of pus between the liver and the diaphragm, just to the right of the coronary ligament. The other organs were normal. Films of the pus from the abdomen showed diplococci morphologically identical with the pneumococcus. The pus from the empyema grown on blood serum gave a Gram-positive diplococcus indistinguishable from the pneumococcus.

CASE 2.—A boy, one year and five months old, had a swelling over the left trochanter which the mother had noticed four days before. On examination the child was found to be a small wasted infant; the temperature was 101·6° F., the pulse was 156, and the respiration was 40. There were no physical signs in the chest. There was a large fluctuating swelling of the size of a man's fist over the left trochanter; the skin over it was reddened. Next day the abscess was opened and the pus evacuated. No communication with the hip-joint could be found. Three days later, as the temperature had not fallen at all (it was then 104°), the abscess cavity was explored under an anæsthetic and one or two small loculi were opened up. These ramifications of the abscess cavity penetrated the intermuscular planes of the buttock in all directions. Counter incisions were freely made. That evening the infant began to vomit and diarrhœa set in. Next day the vomiting and diarrhœa continued; no cause could be found and the child died on the following morning.

At the necropsy the lungs were tough and fibroid, possibly the late results of a pneumonia. At the lower and posterior part of the right pleural cavity there was a trace of pus between the pleural layers which were coated with lymph. The left chest, the heart, and the pericardium were normal. The abdomen was the seat of a diffuse peritonitis. The pus was thick, greenish in colour, and very rich in fibrin. The peritonitis seemed to be most pronounced around the cæcum and the ascending and descending colon. A small shut-off collection of pus was situated between the ascending colon and the cæcum on the outer side and the spine on the inner side, the mesentery and the small intestine bounding it in front. There was lymph on the under surface of the diaphragm. The intestines were normal, as were the liver, the spleen, and the kidneys. There was slight enlargement of the mesenteric glands. The abscess in the left hip was extra-articular and unconnected with bone. No diseased bone could be found. Films of pus from the peritoneum yielded a Gram-positive diplococcus morphologically identical with the pneumococcus. The same organism was found in sections of the spleen stained by Gram's stain and Bismarck brown and in the mucous membrane of a Peyer's patch, of which sections were made.

CASE 3.—A male infant, one month old, was brought to the hospital with the history that three days before he had suddenly been seized with sickness. Previously he had been healthy and had been fed on the breast only. The first day of his illness he had vomited three times and diarrhœa set in on the next day. On the morning of his admission patches of redness were seen all over the body. The child was very wasted, erythematous macules and papules covered the body, the abdomen was greatly distended, and large veins were coursing over the surface. The skin was dusky. There were severe vomiting and diarrhœa. The temperature was 100° F. on admission. The child died in three hours, the temperature having risen to 103°.

The necropsy showed congestion of the lungs; otherwise the thorax was normal, as were the brain and ears. The abdomen was full of thin, yellowish-brown pus, and in places there were quantities of semi-solid, greenish, jelly-like pus. Peyer's patches were a little swollen but there was no ulceration of the bowel. The liver was somewhat fatty but the other organs were normal. Pus from the peritoneum stained by Gram's stain and counter-stained by Bismarck brown showed numerous Gram-positive diplococci morphologically identical with the pneumococcus.

CASE 4.—A girl, aged five years, had had nausea and pain round the umbilicus ten days before admission, with difficulty in micturition, but no scantiness of urine. She had previously been quite well and had never had scarlet fever. There had been a little vomiting for two days. Seven days before admission the feet and legs began to swell and the swelling had been since increasing and spreading upwards. The bowels had been constipated. On the morning of admission redness of the legs and thighs was noticed. On admission at midnight she was seen to be a well-nourished girl. The face was pale, not puffy, and there was no appearance of facies abdominalis to be noted. The mucous membranes were of good colour but the tongue was very foul. The patient complained of severe pain all over the abdomen. There was great œdema of both legs, of a slightly solid character, which extended upwards in the abdominal wall rather more on the left side than on the right. The skin over the lower part of the abdomen and the thighs was red in patches. The temperature was 102° F. and the pulse was 148, not running. There were no physical signs in the chest. The abdomen was considerably distended and moved fairly well with respiration in the upper part and a little in the lower part. There was much general tenderness but the appendix region could be easily palpated and no thickening was felt. There were no dulness in the flanks and no signs of fluid. A catheter was passed and a small amount of urine was drawn off which was loaded with albumin. Nothing abnormal was felt on rectal examination. On the next morning the patient was more comfortable. The physical signs remained the same, save that now the red area comprised a circle of about eight inches diameter, with the vulva, which was a little excoriated, at the centre. The edge of the patch was definite but was not raised. The temperature was 100° and there had been no sickness. The bowels had not been opened. Calomel and salines were ordered. Milk was taken well. Later, ten grains of compound powder of scammony were ordered. During the same night the patient suddenly collapsed and died.

At the necropsy the chest was normal save for congestion of the lungs. The abdomen contained about a pint of evil-smelling fluid just becoming turbid and a small quantity of flaky yellow lymph in the left side of the pelvis. There was general peritonitis and no localised collections of pus could be made out. The genitalia and the appendix were normal. There was congestion of the intestines but no ulceration. Peyer's patches were a little enlarged. The spleen and liver were normal. The kidneys were a little enlarged. The cortex was injected and showed fatty change. The capsule stripped readily and the stellate veins were congested. The vena cava was normal. The brain was not examined (by request). Sections were cut and examined microscopically of the spleen, the kidneys, and a Peyer's patch. The kidneys were in a state of early tubal nephritis. No organisms were seen in the sections nor in those of the spleen and Peyer's patch. Films of the pus (from the yellow flaky lymph) stained by Gram's method yielded a Gram-positive capsulated diplococcus morphologically identical with the pneumococcus. The blood in the femoral vein when cultivated gave the same organism.

A search through the records of the hospital was made in order to see what other cases of the disease had been met with and resulted in the discovery of 12 cases which are briefly summarised as follows.

CASE 5.—The patient was a male, aged 16 months. He had had cough and diarrhœa for some days. He died shortly after admission. At the necropsy broncho-pneumonia was found throughout both lungs, also pyopericarditis, thick lymph on the upper and lower surfaces of the right lobe of the liver, meningitis, and double otitis media. Pneumococci were found pure in films from the brain and the pericardium and in films from the peritoneum pneumococci and bacillus coli communis (necropsy 52 hours after death). In films from the lungs there were pneumococci and other organisms.

CASE 6.—This patient was a female, aged 23 months, who had been vomiting for four days. She was admitted for severe broncho-pneumonia, of which the signs were typical. The abdomen was prominent, distended, and resistant. There was constant vomiting. The patient died a few days later, the signs being unchanged. At the necropsy both the pleural cavities contained lymph, less than one ounce of fluid being present; the pericardium was normal and the liver and spleen were coated with lymph. There were general suppurative peritonitis and caries of the right petrous bone (there had been no aural discharge while in hospital). The brain was hyperæmic but there was no meningitis. In films from the ear and the peritoneum chains of strepto-diplococci, morphologically identical with the pneumococcus, were found.

CASE 7.—The patient was a male, aged five months. He had a sudden onset of screaming and fits. There was no diarrhœa or vomiting. He had flatulence and great abdominal distension. On admission there were râles at both bases; there was an impaired note at the right base. Cardiac dulness was increased; the sounds were pure. There was no marked tenderness of the abdomen and no tumour could be felt. The head was retracted and rigid. The patient died in 24 hours. At the necropsy there were small diaphragmatic empyemata at both bases, also pyopericarditis; the spleen was coated with lymph and there was a little turbid sero-pus in the pouch of Douglas. There was suppuration in the right middle ear, also suppurative meningitis. The pericardial pus showed pneumococci and a few staphylococci on film preparations.

CASE 8.—The patient was a male, aged 20 months. He was admitted with signs of left empyema. This was evacuated. Six days later sickness began; there was no diarrhœa. Sudden death occurred ten days after operation. At the necropsy there were some adhesions in the left pleural cavity and some lymph; the right was healthy. The pericardium was normal. In the peritoneum there were four ounces of pus and thick yellow sediment in the pouch of Douglas, lymph thickly coating the liver and the spleen; there were no adhesions between the coils of intestine. The ears were normal, also the meninges. Pneumococci were present pure in the pus from the empyema.

CASE 9.—The patient was a female, aged three years and nine months. There had been a gradual onset for 14 days. She had headache, drowsiness, and anorexia, and five days before admission she became worse, with severe pain in the abdomen. Next day she had diarrhœa and vomiting, the former for one day, and the latter had continued since. She had constipation on admission. She looked very ill, had facies abdominalis, and the knees were drawn up. There were fine rhonchi in both lungs. The heart was normal. The abdomen was very distended; there was no marked tenderness; it was very rigid, especially on the left side, and resonant all over. There were severe diarrhœa and vomiting. On the next day the patient was weaker and there was less distension. On the following day the distension practically disappeared, diarrhœa was severe, the patient was very restless, and death ensued. At the necropsy there was double empyema, three ounces of pus in all, pyopericarditis, general purulent peritonitis, thick lymph on the upper surface of the right lobe of the liver, the under surface of the left lobe, the upper and outer surfaces of the spleen, the under surface of the stomach, and the intestinal folds. Films of the pleural, pericardial, and peritoneal pus showed pure pneumococci.

CASE 10.—The patient was a female, aged four years and eight months. She had had whooping cough five months before; one month before she had had pain in the chest, dyspnœa, and wasting. On admission there were signs in the right lung which led to operation for empyema 14 days later. The abdomen was normal and the spleen was palpable. 18 days after admission the abdomen became slightly swollen and tender. The child did not improve and died a few days later. At the necropsy in the right pleura was an old empyema cavity; the lower lobe of the right lung showed croupous pneumonia. With regard to the left pleura there was semi-solid greenish lymph from the base to the apex. There was pyopericarditis (greenish pus). In the abdomen there were two ounces of turbid fluid, with flakes of lymph in places, for the most part round the liver. There was some œdema of the meninges. Cultures of the heart's blood yielded pure pneumococci.

CASE 11.—The patient was a male, aged 21 months. He had been feverish for nine days. Six days ago he vomited and had cough and delirium and cried before micturition. On admission he had cyanosis and was very ill. There were signs of fluid at the left base. Two ounces of turbid fluid were aspirated. Three days later ten ounces were withdrawn, followed by death on the next day. At the necropsy, in the left pleura there was greenish lymph and croupous pneumonia at the lower lobe of the left lung. In the right pleura there were turbid fluid and general coating of lymph. Pyopericarditis was present. There was recent lymph and roughening of the peritoneal covering of the spleen. The remainder of the peritoneum was normal. Films of the pericardial and left pleural fluids showed pure pneumococci.

CASE 12.—The patient was a male, aged 20 months. Ten weeks ago he had had broncho-pneumonia. Since then he had been wasting, had anæmia, and a cough. He was admitted with signs of right-sided empyema which was operated on and two and a half ounces of pus were withdrawn. 11 days later he had broncho-pneumonia at the right apex and two days later death ensued. At the necropsy he had broncho-pneumonia in the right lung, the empyema cavity draining well. There was broncho-pneumonia in the left lung. The pericardium and meninges were normal. In the abdomen there was half a pint of green oily pus; there were no adhesions or roughening of the peritoneum. The films of pus from the empyema showed pneumococci alone.

CASE 13.—The patient was a male, aged four weeks. The umbilical cord dropped off on the twelfth day; for a few days there was a slight discharge. On the eighteenth day there were vomiting and diarrhœa with green stools, and swelling of the abdomen. He had since vomited often, but the diarrhœa was less marked. On the twenty-sixth day swelling of the abdomen was more marked; the patient seemed in great pain and the urine was scanty. Discharge from the navel began again on the day of admission (the twenty-eighth). On admission the patient was found to be small and thin; there was no abdominal facies, the pulse was good, and there was no œdema. The abdomen was very distended, tense, reddish blue, and the veins were distended; there was a yellow discharge from the umbilicus. No tumour was felt; there was a fluid thrill. The umbilicus was protuberant. The whole of the right side of the abdomen was dull, save just above the pubes, and dulness extended one inch to the left of the middle line and was not moveable. The chest was normal. Under an anæsthetic five hours later the abdomen was resonant all over. At the operation a "cyst" presented in the wound covered with thickened peritoneum, which was incised; a large quantity of pus escaped. Death occurred on the next day. At the necropsy in the right pleura were blood-stained fluid and shreds of lymph; there was no

pneumonia in the right lung; the diaphragm was markedly œdematous. The left pleura was normal. The intestines were matted together and pressed against the spine. There were an empty potential cavity in front, little lymph, and pus in the splenic region and between the stomach and the colon—pale yellow. The umbilical vein was normal. Films of the pus showed pneumococci only.

CASE 14.—The patient was a female, aged eight years. She had had a cough for one month, with two days of vomiting, some delirium, and pain in the left side and fever. She had been worse for a week. On admission she was thin, blue, very ill, and had rapid respirations and clubbed fingers. The left chest was obviously full of fluid. The abdomen was distended and tender. Operation was performed for empyema and a pint of pus was evacuated. Diarrhœa and vomiting occurred during the next five days; on the sixth day there were distension and tenderness of the abdomen, which increased rapidly. There was constant vomiting, the face became abdominal in expression, and death followed on the twelfth day. At the necropsy there was an old empyema in the left pleural cavity; there was no pneumonia on the left side. In the right pleura was an empyema, with three ounces of greenish pus. There were general peritonitis and coils of bowel loosely adherent, covered with recent green lymph. On the under surface of the diaphragm on the left side was a thick layer of drier lymph. Film preparations of the peritoneal fluid showed the presence of Gram-positive diplococci along with other organisms.

CASE 15.—The patient was a male aged seven weeks. For two days before admission he had been restless and irritable. The day before the abdominal wall was noticed to be red. There had been no vomiting. On admission there was jaundice and the patient had a dull and earthy expression. The abdomen was prominent and œdematous in its lower half; the skin was red and glazed. There was free fluid in the abdomen. The spleen extended down to the umbilicus; a friction rub was heard over it. The liver was two fingers' breadth below the ribs. The abdomen was tender. The infant vomited twice and died within 24 hours. At the necropsy the chest was found to be normal, also the ears and the brain. There were six ounces of green turbid fluid in the abdomen, and lymph in the pelvis and over the organs. The liver was large, firm, jaundiced, and light green in colour. There was recent lymph on the spleen. The appendix was normal. Films and cultures from the pus yielded pure growth of pneumococci.

CASE 16.—The patient was a male, aged four and a half years. For three months he had had a puffy face. Five days before admission he had general œdema, pain in the abdomen, and constant vomiting. On admission he had cyanosis, great œdema, but no signs in the chest. The abdomen was distended and there was free fluid. On the next day there were impairment of the note at the left base and pain and tenderness in the abdomen; two days later death occurred after repeated vomiting. At the necropsy each pleural cavity contained about four ounces of thin pus. There was no pneumonia. In the abdomen there were 10 ounces of thin pus and there was lymph round the spleen. The kidneys were greatly enlarged and pale, the stellate veins were engorged, and the cortex was diminished. Films and cultures from the peritoneum gave pure growth of pneumococci.

ACHONDROPLASIA: ITS OCCURRENCE IN MAN AND IN ANIMALS.

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THE disease which in this country is usually distinguished by the name of "achondroplasia" has many other synonyms. Although this title, which was originally bestowed by Parrot, is not a perfect one it is commonly used, as it is shorter than some and more correct than others. An objection to it has been raised because it suggests that there is no growth of cartilage cells at all, and this is obviously a mistake, as there is plenty of cartilaginous activity but not in the direction of increasing the length of the limb bones. Kaufmann (1892) therefore suggested the term "chondrodystrophia fœtalis hyperplastica"; this, though more correct, is unlikely to come into general use owing to its length. Other terms, such as "fœtal rickets," "congenital rickets," and "fœtal cretinism," are now no longer employed as they suggest an entirely fallacious view of the cause of the disease.

The subjects of this condition are short and stunted in their growth but as the limb bones are chiefly affected they fall under the category of micromelic dwarfs, as distinguished from microsomic, where the growth of all the bones is arrested. Judging from the statuettes of the ancient Egyptian god Pthah, many of which can be seen in the British Museum, the disease is of very ancient origin. Some of the old Egyptian metal workers are also represented as dwarfs of this type. The figure of the god Bes (Fig. 1), although very like an achondroplasiac dwarf, is thought by some to show the appearances of a cretin. Charcot and Richer[1] have also demonstrated that several of the old masters have represented in their pictures dwarfs having the characters of the disease. Velasquez painted pygmies evidently suffering from achondroplasia in some of his paintings for the Court of Philip IV. M. Poncet and M. Leriche[2] have gone much further, however, and have suggested that achondroplasiac dwarfs represent vestiges of a race of men who lived in bygone times and have now disappeared. They regard many of the existing pygmy races as examples of atavistic return to an ancient race of dwarfs who were to be found all over the world. The Akkas and Obongos are cited as types of a "physiological, hereditary, and racial achondroplasia."

FIG. 1.

Figure of Bes.

Now, the Akkas are no doubt pygmies but are most beautifully formed and proportioned and their skeletons do not exhibit the slightest abnormality. The skull, the hands, and limb bones are all perfectly formed and do not show a trace of those changes which are pathognomonic of achondroplasia. The limb bones in particular are long and slender and not short and thick and, moreover, do not show the abnormal radio-humeral ratio. M. Poncet and M. Leriche state that these natives have a tendency to separation of the big toe from the rest of the toes and they quote this as being an approximation to the *main en trident* of achondroplasia. But in the scale of evolution the negro more nearly approaches the anthropoid apes than does the white man and the separation of the big toe is more and more marked the nearer we approach the apes and is seen in *all* negroes. Moreover, it is also seen to a certain extent in those who walk about barefooted. Although these authors give many other reasons in support of their theory they are not in the least convincing. Besides, to state that a disease (for a congenital deformity must be classed as such) is "physiological" is begging the question altogether, as a pathological state cannot be physiological.

Etiology.—The cause of achondroplasia is entirely unknown. Rickets, syphilis, and alcohol, all of which have been given as causes at various times, have not apparently anything to do with the production of the disorder. Cretinism also, is entirely distinct from it. Infants having the disease are frequently stillborn or die in early childhood, but probably many more reach maturity than was formerly thought. Thus, in the 34 cases which I have collected 18 of the subjects were over 17 years of age, seven were over 30 years, and two were over 40 years.

The disease is occasionally hereditary and it has been noticed that more than one member of a family may be affected (see Table III., cases 10 and 11, 16 and 17, 18 and 19). Porak[3] mentions the case of a woman who had the disease and gave birth to an infant similarly deformed. Boeckh[4] also published a case of a female dwarf evidently suffering from achondroplasia whose father and several other relatives had been dwarfs with similar proportions. In some cases, also, it has been found that one or both parents, although not actual examples of the disorder, are, nevertheless, of extremely small stature. Thus in Poncet and

[1] Les Difformes et les Malades dans l'Art, Paris, 1899.

[2] Revue de Chirurgie, December, 1903.

[3] De l'Achondroplasie, Clermont, 1890.

[4] Archiv für Gynaekologie, Band xlii., 1893.

Leriche's cases (Nos. 10 and 11) both the father and mother were only just over four feet in height. In one of my cases (Case 5) the father is only four feet eight inches in height.

Pathology.—The bones of the skeleton which are formed entirely in membrane and those in cartilage which remain altogether or mainly cartilaginous till a late period of intra-uterine life are normal. Those ossified from cartilage before birth are dwarfed. Therefore the limb bones are chiefly affected, the clavicle excepted. The cause, whatever it may be, affects the infant very early, as the changes in the skeleton occur during the first few months of intra-uterine life. By the time the child is born the disease has run its course and is no longer active, so that the abnormalities seen are only the results of a malady which is passed. The skull, as a whole, is unaffected or is larger than usual; but one constant feature of the disease is premature synostosis of the basi-occipital with the basi-sphenoid. The result of this is marked depression and flattening of the bridge of the nose. The chief anatomical changes which take place have been summed up very concisely by William Turner[1] and are as follows. 1. At the junction of the epiphysis and the diaphysis the cells are abnormal as regards their size, shape, and arrangement, and the primary bony areolæ which usually lie in the axis of the bone are absent. As a result the diaphysis does not increase in length. 2. There is an ingrowth of the periosteum between the epiphysis and the diaphysis, so that the ossification of the cartilage cells in the primary areolæ is absolutely prevented. Occasionally the epiphysis and diaphysis remain ununited. The periosteum continues to form bone along the shaft, which may be unduly thick in proportion to its length and may present irregular bosses like exostoses. Sometimes the bones are soft and bend, but this is more frequently seen in the lower than in the upper extremities. (See Fig. 2.)

Symptoms.—The appearance of the patient is at once most striking and characteristic, as the marked disproportion between the length of the trunk and that of the limbs and the large size of the head are obvious to the most casual observer. The head is large, rounded, and in shape resembles that of a person suffering from hydrocephalus; the fontanelles remain open for an abnormally long period of time and are usually very large. Craniotabes is not present. The face in relation to the skull is small; there is a marked depression of the bridge of the nose due to the premature ossification of the occipital bone with the sphenoid. Dentition is normal but the palate is, as a rule, rather more arched than usual. In some cases the mouth may be kept half open and the tongue slightly protruded, but this is by no means a constant feature. In Fig. 3 the child shows

FIG. 2.

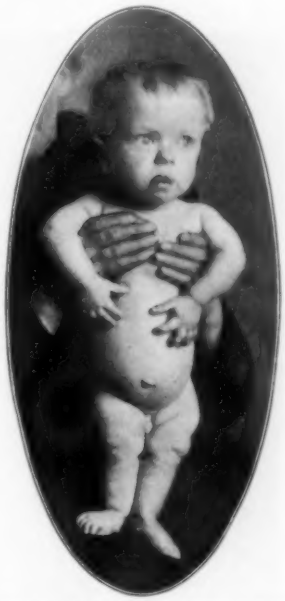
Skeleton of an achondroplasiac fœtus at term.

this habit and the mother, whose face does not appear in the reproduction of the photograph, manifested the same peculiarity. In contra-distinction to cretinism the intelligence is exceptionally good.

The trunk.—This is normal in length but the ribs are usually "beaded" anteriorly; this beading is not the same as that due to rickets. Lordosis is usually present and is due to an abnormal anterior projection of the lumbar vertebræ, as it does not disappear on placing the patient on the back and elevating the legs. Owing to the lordosis the abdomen is prominent and the buttocks project (see Fig. 4). In one of my cases, however (Case 5), lordosis was absent and a marked kyphosis, similar to that due to rickets, took its place.

The limbs—upper extremity.—The clavicle shows no abnormal change but the humerus, radius, and ulna are very

FIG. 3.



Child, aged one year and three months (No. 5 in table), showing *main en trident*, &c.

short and thick and may be slightly curved; this curvature is less often seen in the upper than in the lower extremity. The elbow can seldom be extended beyond an angle of 135° and this gives the arm an appearance of being curved with the concavity inwards. Bosses of bone can occasionally be felt on the diaphyses. The epiphyses are very broad and thick; this is most marked at the lower end of the humerus.

It has been stated by many writers that the normal ratio of the length of the arm to the forearm is reversed in achondroplasia—i.e., the forearm is longer than the arm. This is so in the majority of instances but is by no means the case in all. Thus, out of 26 cases where the measurements were given the forearm was longer than the arm in only 13 instances. In four cases the arm and forearm were of the same length. As the greater number of recorded cases are those of children I thought that this "reversed ratio" might only obtain before adolescence was reached. But although the "reversed ratio" still held, yet the proportion was altered.

TABLE I.—*Showing the Proportional Length of the Forearm to the Arm in 26 Cases.*

—	Under 20 years of age.	Over 20 years of age.	Total.
The forearm longer than the arm ...	8	5	13 or 50%
The forearm shorter than the arm ...	5	4	9 or 34·6%
The forearm same length as the arm	3	1	4 or 15·3%

The hands are of a peculiar shape, being broad and short, and the fingers are short and tapering. The proximal phalanges are so much broader than the terminal ones that the finger-tips cannot be approximated. There is thus a

[1] Practitioner, vol. lxiii., 1899.

space left between the ends of the fingers, and this space is especially marked between the middle and ring fingers, so that the index and middle fingers are directed to the radial and the ring and little fingers to the ulnar side of the hand. This is the so-called *main en trident* (see Fig. 3). An abnormal range of movement is usually present in all the joints below the wrist, so that the dorsal aspects of the fingers can be made to touch the back of the forearm with ease. The thumb and little fingers can also, as a rule, be bent so

FIG. 4.

Child, aged six years (No. 6 in table), showing lordosis, &c.

as to touch the radial and ulnar borders of the forearm respectively.

Lower extremity.—The changes are very similar to those observed in the upper extremity, the bones being very short and thick and frequently present bosses, especially in the neighbourhood of the knee-joint. As in the upper extremity, it has been stated that the leg is longer than the thigh, but on examining the figures in 23 cases I find that the reverse of this is the case.

TABLE II.—*Showing the Length of the Leg and the Thigh in 23 cases.*

—	Under 20 years of age.	Over 20 years of age.	Total.
The leg shorter than the thigh ...	9	5	14 or 60·9%
The leg longer than the thigh ...	5	4	9 or 39·1%

The fibula, however, is peculiar in that in nearly all cases the upper end enters into the formation of the knee-joint. On the anterior aspect of the knee deep annular folds of the skin can frequently be seen, as if the integuments were too long for the bones. The tarsus, metatarsus, and phalanges are normal. The pelvis is small and narrow and in the event of a female achondroplasiac dwarf becoming pregnant there may be considerable difficulty and danger in parturition. The muscles are usually well developed and as the limb bones are very short the leverage obtained is enormous, so that all sorts of acrobatic feats can be performed with ease. Thus, for instance, one of my subjects (Case 6) could touch the floor with his forehead with ease whilst walking or running. He could also sit down and rise up again without bending the knees and could turn back somersaults without any difficulty whatever.

Diagnosis.—The conditions for which achondroplasia is liable to be mistaken are rickets and cretinism. But errors in diagnosis ought seldom, if ever, to be made, as the diseases present quite different symptoms.

Rickets.—In the first place, the signs of achondroplasia are present at birth, whereas those of rickets seldom appear before the end of the first year. A certain number of cases of so-called congenital rickets have been recorded, but it is exceedingly doubtful if the disease really exists. Moreover, there is no disproportion in the length of the body to the limbs in rickets, the curvatures of the bones are usually distinct, and the characteristic signs of achondroplasia—viz., the shape of the fingers, the short and broad limb bones, the depressed nose, &c.—are absent.

Cretinism.—Here the disease is congenital, but although the growth of the child is stunted the limbs are not unduly shortened in relation to the length of the body. The half-open mouth allows the large size of the tongue to be seen, the hair is coarse and scanty, and the skin is rough; supraclavicular fatty pads are usually present and the absence of, or much diminished size of, the thyroid gland may be made out. Again, the signs characteristic of achondroplasia are absent. If, in spite of these differences, the diagnosis is still uncertain the effects of treatment will soon clear up any difficulty, as both rickets and cretinism are readily amenable to treatment, whilst achondroplasia is unaffected by any treatment, either medicinal or dietetic.

THE OCCURRENCE OF ACHONDROPLASIA IN ANIMALS.

Several writers (Ballantyne,[6] Poncet and Leriche and others) have stated that achondroplasia occurs in animals and have suggested that dachshunds, basset hounds, Ancon sheep, &c., are examples of the disease. Evidence for and against the theory is somewhat difficult to procure but so far as I can make out there is no proof whatever that the disease does occur in animals. The various animals suggested will now be dealt with seriatim.

Dogs—Dachshunds.—The striking appearance of these animals, with their short and crooked legs and long body, has no doubt been the reason for supposing that achondroplasia is the cause. The following extracts, however, throw some light on the matter:—

> Though the origin of the dog generally is lost in obscurity, yet the dachshund can claim a very long pedigree, for a dog resembling it is found on the monument of Thothmes III., who reigned over Egypt more than 2000 years B.C. and at whose Court the inscriptions state he was a favourite; and a breed of similar appearance has been discovered by Dr. Haughton on early Assyrian sculptures. No doubt research would bring to light other notices of the same kind, but these show that the abnormal shape of the forelegs is not due to disease, as has been supposed by some who have not studied these dogs. ..... This peculiarity (i.e., the short limbs, &c.) is more commonly found than is generally imagined. Beside the basset, both rough and smooth, and the dachshund of France, it is apparent in an Indian breed, in the Swedish beagle, in the spaniel of Hungary and Transylvania, and almost certainly in the old English bloodhound, though judges, setting Shakespeare at nought, are trying to get rid of it as a deformity.—Lovell.[7]

And again, Darwin[8] says:—

> On Egyptian monuments from the fourth to the twelfth dynasties (i.e., from about 3400 B.C. to 2100 B.C.) several varieties of the dog are represented. ..... There is also a turnspit with short and crooked legs, closely resembling the existing variety, but this kind of monstrosity is so common with various animals, as with the Ancon sheep, and even according to Rengger, with jaguars in Paraguay, that it would be rash to look at the monumental animal as the parent of all of our turnspits.

Now, it is inconceivable that, even supposing that an ancient Egyptian dachshund was afflicted with achondroplasia, every separate individual born during the last 3000 years should also be affected with the disease. Such a condition of things is absolutely unknown in pathology. It is much more likely that the shape of the dachshund arose suddenly as a variation and that it has been preserved by selection, either natural or artificial, through man.

> Some of the peculiarities characteristic of the several breeds of the dog have probably arisen suddenly and, though strictly inherited, may be called monstrosities; for instance, the shape of the legs and body in the turnspit of Europe and India. ..... A peculiarity suddenly arising, and therefore, in one sense, deserving to be called a monstrosity, may however be increased and fixed by man's selection.—Darwin.[9]

[6] Antenatal Pathology and Hygiene, 1902.
[7] Book of the Dog, by Vero Shaw.
[8] Animals and Plants under Domestication.
[9] Ibid.

TABLE III.—GIVING PARTICULARS OF 34 COLLECTED CASES OF ACHONDROPLASIA.

Case.	Author.	Age.	Sex.	Height.	Circumference of the head	Humerus.	Forearm.	Femur.	Leg.	Trunk.
				Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
1	J. Thomson (Practitioner, vol. lxiii.).	5 months.	M.	23	—	3	—	—	—	—
2	,, ,,	39 years.	M.	49	22·4	6·3	6·1	9·05	8·26	—
3	,, ,,	36 ,,	M.	49	23·23	—	—	—	—	—
4	Wm. Turner (Practitioner, vol. lxiii.).	10 ,,	F.	37	21·75	5	4·5	7	5·5	—
5	Keyser.	1 1/12 ,,	M.*	23	18·5	2·75	2·75	4·25		11
		2 1/12 ,,		25·75	19	3	3·25	5·5	3·75	—
6	Ditto.	6 ,,	M.	37	21·5	3·75	6	7·5	9	15
7	A. E. Garrod (Transactions of the Clinical Society of London, 1898).	6 ,,	F.	37·5	—	4·5	—	7·75	7·25	21·
8	Pierre Marie (La Presse Médicale, No. 56, 1900).	41 ,,	M.	48	26·3	5·1	6·9	9	9·44	18·7
9	Pierre Marie.	18 ,,	M.	42·3	23·2	4·3	5·9	7·2	8·7	16·3
10	Poncet and Leriche (Revue de Chirurgie, December, 1903).	31 ,,	M.	47·24	22	6·69	7·48	11·02	10·63	21·26
11	Ditto.	28 ,,	F.	46·06	20·5	5·9	6·3	9·05	9·44	20·47
12	Boeckh.	23 ,,	F.	38·1	—	—	—	—	—	—
13	Bailly.	27 ,,	F.	40·7	—	—	—	—	—	—
14	Baldwin (Medical News, 1900).	24 ,,	F.	47·5	—	—	—	—	—	—
15	Jules Comby (Brit. Med. Jour., vol. ii., 1902).	5½ ,,	M.	34·4	21·2	4·4	4·4	5·2	6·0	—
16	Peloquin ("De l'Achondroplasie chez l'Homme et les Animaux," 1902).	25 ,,	M.	44·4	21·4	12·4		21·2		—
17	Ditto.	26 ,,	F.	39·6	—	—	—	—	—	—
18	Ditto.	30 ,,	M.	48·8	22·4	6·8	7·6	11·2	10·8	—
19	Ditto.	27 ,,	F.	47·2	—	9·8	9·4	13·6	13·2	—
20	Pauly and Teissier.	45 ,,	F.	58·2	—	6	6	8·8	8	—
21	Parrot.	7½ ,,	F.	37·2	—	—	—	—	—	—
22	Charpentier.	30 ,,	F.	46	—	6·8	5·6	8	9·6	—
23	Crimail.	22 ,,	F.	51·2	—	7·6	7	11·4	12·4	—
24	Lugwe.	18 ,,	F.	48	—	7·2	6	9·6	10	—
25	Morse (Archives of Pediatrics, August, 1902).	2 months.	M.	16·8	13·2	2·8	2·8	2·6		—
26	Holt.	4 years.	F.	32	21	—	—	—	—	—
27	Herman (Archives of Pediatrics, January, 1903).	15 ,,	M.	46·8	21·8	6·2	6·8	8·8	10	—
28	Wood and Hewlett (Intercolonial Medical Journal, 1902).	45 ,,	M.	49·6	22·25	6·25	7	9·5	—	20·5
29	Ditto.	7 ,,	M.	37	22·5	4·75	4·25	7·25	5·75	15·25
30	Ditto.	8½ ,,	M.	36	22·5	5	—	12·75		14·25
31	Ditto.	11 ,,	F.	42·5	23·5	6·25	5·5	8·5	7·75	17
32	Balme and Reid (Practitioner, December, 1904.)	12 ,,	M.	38·75	23·75	5·5	5·8	7·6	7·25	—
33	H. M. Joseph (THE LANCET, July 22nd, 1905, p. 217).	3¼ ,,	F.	30	20·5	3·2	4·4	5·6	4·8	14·4
34	W. Byam.	3½ ,,	F.	27·5	22	3	4	6·25	4·75	—

In Cases 10 and 11, 16 and 17, and 18 and 19 respectively the subjects were brothers and sisters. * The same patient at different ages.

Remarks.—CASE 5.—The bridge of the nose is markedly depressed. The hands with arms outstretched reach only to the umbilicus. *Main en trident.* No lordosis. Kyphosis present. Father only 4 feet 8 inches in height. Mother normal. CASE 6.—Marked depression of the bridge of the nose. *Main en trident.* Marked lordosis. No annular folds of skin about the knees. Very intelligent. Has grown two inches in one year. Parents normal. CASE 10.—Grandfather 4 feet 5 inches; also father. Mother 4 feet 7 inches. The bridge of the nose is slightly depressed. The hands are not typical. CASE 11.—*Main en trident* (slight). Very intelligent. CASE 15.—*Main en trident.* CASE 34.—Very intelligent. *Main en trident.* Both parents normal.

Moreover, on examining the skeleton of a dachshund there is not the least suspicion of any osseous disease. The forearms and legs are not longer than the arms and thighs, the epiphyses are normal, and the skull is not enlarged. The fibula does not enter into the formation of the knee-joint and the nasal bones are not depressed. If achondroplasia is diagnosed solely on account of the shortness of the legs as compared to the body, then basset hounds, Skye terriers, Aberdeen terriers, Yorkshire terriers, &c., must all be examples of the disease.

Cattle, &c.—Bull-dog calf.—This animal, which is always stillborn, is occasionally seen as the offspring of the Dexter Kerry cow. It is very small, being of about the size of a fox terrier, and has very short limbs as compared to the length of the body. It has received its name, however, from the extraordinary appearance of its face; this somewhat resembles a bull-dog owing to the shortness of the upper lip and jaw, the flattening of the nose, the wide nostrils, the projection of the lower jaw and lip, and the exposure of the gums. There is no reason for supposing that this condition is due to achondroplasia and it must be regarded simply as a monstrosity or "sport." This appearance of "bull-dog face" is not at all uncommon amongst animals, for besides the well-known examples, such as the bull-dog, pug, King Charles and Blenheim spaniels, it is mentioned by Darwin as occurring in two small herds of cattle which he saw on the north bank of the Plata river. They go by the name of Niata or Natas. The same authority quotes Professor Wyman of Cambridge, U.S.A., who observed the same thing in codfish. Mr. Boulenger, vice-president of the Zoological Society of London, informs me that a similar condition exists in carp, salmon, &c., and also in reptiles. E. Ray Lankester,[10] in speaking about elephants, says:—

If you look at an elephant's skull and compare it with that of a dog or pig, you will be struck by the abrupt way in which the bones of the

[10] Extinct Animals, 1905.

face are set. The face is almost straight so far as the bony parts are concerned—both the upper and lower jaw are quite short. There is, in fact, no "snout" indicated in the bony skull. This extreme shortening or pushing in (as it were) of the face is similar to what occurs in bull-dogs and pugs as compared with ordinary long-snouted dogs ..... only in the elephant it is carried further than in any dog. We may call this shortening of the face "bull-dogging." This "bull-dogging" of the skull occurs in a South American race of cattle called the Neatta breed. It seems that the ancestral elephants must have had a long face and bony snout like other animals but that their descendants have gradually become "bull dogged." The mastodon's skull shows far more of a projecting bony face or snout than does that of the elephant, and this would lead us to suppose that the mastodons are more primitive—that is to say, more like the ancient ancestors of elephants than are the true elephants. An interesting fact in this connexion is that the young, new-born elephant has a more "snouty" skull than the grown-up elephant. It is often the case that very young animals show features in which they resemble their ancestors which disappear as the young creatures grow to full size.

We may conclude then from these statements, made by eminent authorities, that there is no reason whatever to suppose that achondroplasia exists in animals.

TUBERCULOUS DISEASE OF THE SEMINAL TRACT.[1]

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THERE are two classes of disease that must always be of interest to us, those that are very rare, and for this reason interesting, and those that are very common, for on our power of curing common ailments depends largely our measure of professional success. It is to a very common disease—namely, tuberculosis—that I wish to draw your attention.

The genito-urinary tract is often attacked by tuberculous disease. In some parts of this system the diagnosis may be beset with considerable difficulty; in that portion of the system, the testicle, the cord, the seminal vesicles, and the prostate, to which I wish to call your attention, the diagnosis leaves as a rule no room for doubt. When the question of treatment arises there seems to be, on the other hand, considerable difficulty in selecting the best course to pursue; for this reason I hope that this paper, since it deals more particularly with the treatment of tuberculosis of the seminal tract, may prove of interest to you.

Tuberculous disease may occur primarily in the kidney, the bladder, the prostate, the seminal vesicles, or the testicle, or it may occur as a secondary deposit in any of these organs. The testicle is most commonly affected of all these, by testicle I mean both testis and epididymis, for the latter is more often attacked than the former. There is an interesting difference between the primary and secondary infection of the epididymis by tubercle. In the primary the disease is deposited in the tubules and from its commencement is in connexion with the lumen of the vas; in the secondary the infection more commonly occurs in the connective tissue outside the tubules, and it may be months before the bacilli gain entrance to the vas. This has an important bearing on the extension of the disease from a tuberculous epididymis.

In what direction does this disease spread from the epididymis? Into the body of the testicle itself, where inflammatory changes or the actions of toxins, or perhaps both causes, early in the disease render the testicle functionless. The flow of seminal fluid along the vas is very slow except during ejaculation, when the powerful muscular walls of the vas contract strongly. The tubercle bacilli are carried along in this sluggish stream and have many opportunities of infecting the walls of the vas; they finally reach the seminal vesicles, where they are stored for a time until finally discharged into the urethra. The vas may be infected the whole way along. In early cases of its infection this commonly takes place at either end—that is, within an inch or two of the epididymis or near its termination in the seminal vesicle. The cord between these two points may be quite normal and so lead one to suppose that as the cord is healthy above a tuberculous testicle therefore the disease has not extended up along the vas deferens.

[1] A paper read before the Surgical Section of the Royal Academy of Medicine in Ireland on Dec. 1st, 1905.

CASE 1.—In February, 1905, I saw a young man who had had one testicle removed for tuberculous mischief about two years before. The second testicle now had a similar deposit; the cord felt quite normal and we hoped to be able to curette away the disease and to save the testicle if there was no sign of infection spreading up to the seminal vesicles. Even after the cord was exposed with its veins the vas felt normal but the testicle was found too far involved to save it and it was in consequence removed, the vas being separated from the rest of the cord at the same time. It then became apparent that the vas was not healthy; two minute nodules were situated in its wall about an inch above the testicle. As much as possible of the cord was removed and inside the abdomen two more small nodules were found on the vas. Rectal examination showed no sign of infection of the prostate or seminal vesicles, but I fear that this may occur later.

The disease often attacks the second testicle and from there it may extend backwards along the cord to the seminal vesicle on the same side, or the reverse may occur, the second vesicle being infected from the first vesicle or the prostate and from this the tubercle spreading to the testicle against the direction of the seminal flow. That infection can go in this direction we all know from cases that are not uncommon of sepsis spreading from the posterior urethra to the epididymis.

The age at which tubercle shows itself in the epididymis is about from 16 to 24 years, seldom after this, though deposits sometimes occur in infants. Injury is the most commonly assigned cause, where any cause at all is given. I think that a form of what I might almost call chronic injury is not without importance—I refer to masturbation. This is an unsavoury subject to discuss and for this reason is ignored to a greater extent by most surgeons than it deserves to be. So often in taking the histories of severe cases of genito-urinary tuberculosis have I learned that the patient was a masturbator and continued this practice after the first appearance of the disease that I feel confident that masturbation has a direct bearing both on the causation and the spread of tuberculosis of the genital tract. Where only one testicle is affected, as a rule the surgeon will not hesitate to remove the disease; in all probability to do this completely will necessitate the removal of the testicle. This loss is not a serious one from the patient's point of view and the operation is often attended with the most satisfactory results. Sometimes this is not so, and later the disease appears in the second testicle or when the patient first presents himself both the testes may be already infected. In these circumstances general anti-tuberculous treatment may be used, a partial operation may be done—i.e., the disease scraped away as completely as possible—or a complete operation may be done and both testicles removed.

Castration is a very serious operation from the patient's point of view and unless his surgeon can promise him almost certain success as the result of the operation he will hardly submit to it, even though the testicles themselves are functionless. I have already called your attention to the fact that early in the course of the disease, be it in testis or epididymis, the function of the testicle is lost; it is in these circumstances useless to the patient and a source of danger to him. If the disease has extended to the prostate, seminal vesicles, or bladder there is not much use in removing the testes and hoping that this may check the disease, for such hopes are not likely to be realised. This procedure has been often recommended but I do not think that it ever stops the advance of the disease, indeed, I believe that it has quite the opposite effect, that in reality it lessens the resisting power of the prostate and vesicles to withstand the advances of the tubercle, for the removal of the testes leads to a gradual atrophy of these organs, and with this atrophy there will in all probability be a diminished power of resistance to disease.

Can the extent to which the disease has spread be definitely made out? In most cases it can; if the urine is clear, if the bladder holds from 12 to 14 ounces without pain, and if there is no frequency of micturition, in all probability the bladder is not infected. Still infection of the bladder sometimes occurs as submucous tubercles which may give rise to no symptoms; they can be readily seen through a cystoscope. It is well in all such suspected cases to examine the bladder by this means.

Infection of the seminal vesicles and prostate may give rise to similar symptoms to those of bladder infection, and

here, again, it is advisable to make a cystoscopic examination. On the other hand, I have seen several cases of infection of both prostate and vesicles in which there were no symptoms beyond a slight feeling of weight in the perineum, yet on rectal examination extensive disease of these organs could be easily made out. Nodules in the prostate can be readily felt by the examining finger in the rectum, but the vesicles are harder to reach; fully distending the bladder with from 20 to 30 ounces of an unirritating antiseptic lotion, and then placing the patient in the knee-chest position will be found of assistance in carrying out this examination.

I next wish to draw your attention to the course which this disease takes when the entire seminal tract is involved. I can best do this by describing three typical cases which have lately passed through my hands.

CASE 2.—In August, 1905, I saw a man, aged 25 years. He told me that five years before the left testicle became swollen and discharged pus through the scrotum for several months and then was pronounced well; six months later the other testicle became enlarged, broke, discharged for six weeks, and then healed. For a year all went well, then an abscess appeared in his right groin, and this abscess had never completely healed. Four months previously the bladder became involved; there had been increasing distress since then. His present condition was as follows. His urine contained a quantity of pus, blood, and tubercle bacilli; he passed urine every ten minutes day and night; pain was always present and often very severe. There were tuberculous nodules in each epididymis, in the prostate, and in both seminal vesicles; the cords felt normal. The bladder was highly inflamed; tuberculous ulceration had occurred in several places; the mouths of both ureters were patulous. The disease will almost certainly extend up to the kidneys if it has not already done so.

CASE 3.—A strong-looking man, aged 28 years, was admitted to the Adelaide Hospital under my care in March, 1905. From the age of 16 years he had been a confirmed masturbator. At 20 years he developed a small nodule in his left testicle; this was treated for some months with applications and finally ceased to trouble him. Three years later a similar nodule appeared in his right testis. After a time this broke and finally had to be scraped out. For two years after this he kept well, then the testis broke out again and symptoms of irritation at the neck of the bladder began to show themselves and pus appeared in the urine. A month before admission he was attacked by pain in the region of his left kidney; this pain had never since left him. He had great pain on passing urine; this he had to do every few minutes during the day and about every half hour through the night. The urine was foul and contained a considerable amount of pus. Tubercle bacilli were present. There were tuberculous deposits in both epididymi, in the right vas, and in both seminal vesicles; the lower end of the left ureter could be felt much enlarged; the left kidney was swollen and tender. The walls of the bladder were inflamed and in places ulcerated. The mouth of the left ureter was wide open; from it pus was coming. The left kidney and ureter are infected in this case.

CASE 4.—A soldier, aged 26 years, was admitted to hospital under my care in January, 1905. He was a confirmed masturbator until about the age of 20 years. At the age of 21 years, while serving in Egypt, a small tuberculous nodule developed in his right testicle; it gave him no pain or inconvenience and was not treated. Two years later, while serving in South Africa, the other testicle became affected. He was sent into hospital where the testis was removed. In six weeks he was back on duty again, his health during the whole time being excellent. Two years later bladder symptoms began to come on; pus appeared in the urine, pain became severe, and finally he was invalided from the service. When I saw him his condition was pitiable. The right testicle, vas, both seminal vesicles, and prostate were infected; there was extensive ulceration in the bladder. From the right kidney a quantity of pus was coming; the kidney itself was much enlarged and tender; the left kidney was also painful and the urine coming from it contained pus. The urine was voided every few minutes; it contained numbers of bacteria and among them tubercle bacilli. To try to relieve the intense pain in the right kidney I drained it from the loin. It was a mere bag of foul pus; this drainage gave temporary relief. He was moved to the Rest for the Dying and died there some two months later.

These three cases have many points in common. I could find no sign of tuberculous disease outside the genito-urinary tract; in each the deposit in the testicle was, I think, primary. This was followed by the infection of the vesicles, prostate, and remaining testicle at varying intervals; from this the disease spread to the bladder; in Case 3 it had reached one kidney; in Case 4 it had destroyed the kidneys and finally put an end to years of suffering. I fear that the same fate is in store for Cases 2 and 3; treatment may delay, but will hardly prevent, a similar termination. The disease occurred in otherwise healthy young men who all had surgical advice and the means to carry out the treatment ordered. In the worst case the disease developed while the patient was in Egypt and South Africa, both climates which should have helped to stay its progress. These three patients would have submitted to any operation, no matter what mutilation it might entail, if it would relieve their pain, even if it did not cure, but beyond draining the kidney in the one case I did not see that any operative interference was justified.

I have given these cases in some detail for they are, I think, typical of their class and because they have left a vivid picture on my mind of the course and termination of this disease. Of earlier cases occurring during the past five years, in which both testicles and prostate or seminal vesicles were infected, some I have been unable to trace but in all those that I have been able to follow the disease has progressed from the seminal tract to the bladder and from there has infected some vital organ, eventually causing death. I may have been unfortunate in the cases which have come under my notice. They have compelled me to believe that the ordinary methods of treating this form of the disease, such as open air, dry climate, forced feeding, &c., combined with partial operations, such as scraping away the tuberculous deposit from the testicle, are of little avail in checking its course and offer small hope of cure to the patient.

CASE 5.—In January, 1905, a young man, aged 22 years, was admitted under my care at the Adelaide Hospital. From the age of 15 years he had constantly masturbated; he attributed all his trouble to this vice. Three years before his left testicle became swollen and painful. This swelling passed off, leaving a small hard nodule in his epididymis; this nodule gave him no further trouble. Three months before admission his right testicle began to swell, broke, and pus came away. On admission there was a hard tuberculous node in his left epididymis; the vas above this felt normal. On the right side the whole testicle and epididymis were tuberculous. A sinus led to the former from which pus was coming. The vas above felt as thick as a lead pencil right up to the inguinal canal. With a finger in the rectum the vas on the same side could be felt still thickened as it passed into the prostate. The vesicles and prostate itself felt normal. The urine was normal. Cystoscopic examination of the bladder showed it to be quite healthy. I advised the removal of the right testicle and, if possible, the whole of the vas. This I tried to do by following up the vas into the inguinal canal, the floor of which I opened, dividing the deep epigastric artery. I could not get the entire vas away through this anterior incision and left behind about an inch of it. I left in a small drain but nothing came away and the wound healed in ten days.

On his discharge from hospital the patient was given orders to report himself to me once a month in case of further infection taking place. He did not come for three months; one end of the wound had opened and was discharging tuberculous pus, evidently from the remains of the diseased vas, the remaining testicle and cord showed signs of fresh infection, and tuberculous nodules could be felt in the prostate and both seminal vesicles; there was, in fact, active disease of the whole seminal tract. The urine remained normal, the bladder was healthy, but I could see the swollen right vesicle bulging up into the base of the bladder. I felt that the only treatment which offered a reasonable hope of success was the removal of the whole of the disease; the remaining testicle was useless and should be removed; with it should come both cords, vesicles, and prostate if this could be done without great risk to the patient.

There are three different routes by which the vesicles may be reached—Zuckerkandl's by a perineal incision; Kraske's by removing a portion of the sacrum, pulling the rectum to one side, and so exposing the base of the bladder; and Young's, who by a large T-shaped incision through the lower part of the abdominal wall dividing both recti muscles, gets

at the bladder in this way. Of these three the first is the simplest and much the least severe operation. I tried this operation several times on the cadaver but found it exceedingly difficult to reach the vesicles by this method. I looked up some works on genito-urinary surgery to see what advice they gave as to the removal of tuberculous seminal vesicles. The information they contained was not altogether encouraging. Watson Cheyne says: "Some surgeons have performed elaborate operations for the removal of tubercular seminal vesicles before suppuration has taken place. It is doubtful, however, whether an operation of this kind should ever be performed as it must be very extensive and the affection is usually secondary and therefore does not warrant it." Lydston says: "Any of the radical operations performed on the prostate and seminal vesicles for malignant or tubercular disease are, in the author's opinion, absolutely unjustifiable. The operator displays brilliancy of technic and boldness of surgical enterprise, but no other ends are conserved." Taylor says: "In the vast majority of cases, operative treatment is not to be thought of, unless suppuration has occurred in the sac, when its contents must be evacuated through a perineal incision, the cavity cleaned and packed with iodoform gauze. These patients should be sent to a suitable climate and receive the regular treatment for tuberculous subjects."

In spite of these remarks I still felt that an attempt should be made to remove the disease from my patient. I decided to follow the steps of Young's operation for perineal prostatectomy, hoping by the use of his tractor to bring the vesicles well within reach. I do not intend to describe the steps of the operation, as this was admirably done by Dr. C. A. K. Ball at this Academy last session, a full account of which appears in last year's Transactions. The two dangers I feared were that in separating the adherent seminal vesicle from the bladder I might injure the ureter, the other that the veins surrounding the vesicles and prostate might cause dangerous hæmorrhage. As a precaution against the second I gave the patient drachm doses of chloride of calcium night and morning for three days before the operation. Whether this had any effect or not I cannot say, but the amount of blood lost during the operation was very slight. I removed the testicle and as much of the cord as I could from the front; then closing the inguinal wound I removed through the perineum the ends of both vasa deferentia, vesiculæ seminales, and the prostate. I had no great difficulty in separating the upper part of the right vesicle from the ureter, but the portion near the prostate was firmly attached to the bladder wall; either I used too much force with the tractor or had gone too deeply, for the blade of the instrument perforated the bladder wall where the vesicle had been attached to it. I made no attempt to close this opening but passed into the bladder two No. 12 catheters, one through the urethra and the second through the perineal wound and packed firmly round this perineal drain with iodoform gauze. The gauze plugs were removed on the second day, the perineal tube on the fourth day, and the urethral catheter on the seventh day. On the eighth day the patient was allowed up; he had then no difficulty in passing urine, had perfect control over the bladder, and there was no leakage from the perineal wound. On two occasions later some slight leakage occurred from this wound but did not last for more than a day and since then the wound has kept dry and has healed well.

Six months later I examined this patient. His bladder was quite healthy and the wound at the side of the trigone was firmly healed; the urine was normal. No return of the disease could be felt by the rectum. His general health was good; he had put on over a stone in weight since the operation. I hope that this case is cured.

CASE 6.—In August, 1905, another case of the same kind came under my care, with the exception that the patient was younger, only 19 years old, and that the one testicle was removed about a year before the disease appeared in the second. The cases were almost the same and I will not weary you with what would be almost a repetition of the one I have just described to you. The vesicles were not adherent to the same extent and came away without any injury to the bladder wall. The perineal wound was slower in closing. The boy was up on the eighth day and had perfect control of his bladder from this time onwards, yet for nearly a month there was a slight leakage of urine through the perineal wound every time he micturated. By the end of September he was able to resume his work and has since kept quite well and is putting on weight. It is much too soon to say there will be no recurrence of the disease in this case but his condition leads me to hope that he also is cured. The entire operation did not exceed in either case 45 minutes. This time included the removal of the testicle and cord by an inguinal incision and the prostate and vesicles by the perineal. There was no shock in either case but each patient received a saline transfusion before he left the operating table.

In conclusion let me recall to you a few important points. 1. That infection may readily pass along a normal vas to the vesicle or prostate; the fact that the vas above a diseased testis feels healthy is no proof that the tubercle has not extended to the vesicles. 2. That when both testicles and seminal vesicles are infected radical treatment alone is likely to be followed by success. 3. That where the disease is confined to the seminal tract it can be completely removed and that without any great risk to the patient. 4. That in all probability the patient is functionally no worse after such an operation than he is after a partial operation on both testes.

My thanks are due to Mr. T. E. Gordon who assisted me at the first operation and to Mr. F. T. Heuston who helped me at the second and also to Professor A. F. Dixon for much help and advice in the anatomy of the seminal region.

Dublin.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

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THE patient whose illness is now described was a Pathan recruit of the 51st Sikhs frontier force and was admitted into the regimental hospital at Fort Lockhart on March 22nd, 1906, for "jaundice." He was a strong, healthy-looking man, aged 18 years, and had never been in hospital before. He did not come of his own accord to hospital but he was noticed to be jaundiced when a medical inspection of a company of Pathans was being held and accordingly was sent to hospital. He had come up to the fort on the preceding day from Hangoo, a small post 15 miles away, and stated that he had been of a yellow colour for two days. His condition on admission was as follows. He had marked jaundice, his conjunctivæ were yellow, and his skin was of a saffron yellow tint. His urine contained a considerable quantity of bile but no albumin. His fæces were quite white. His pulse-rate was not slow, being 80, quite regular, and of good volume. His temperature was normal. An examination of the chest revealed nothing abnormal. Liver dulness commenced at the upper border of the sixth rib in front on the right side and in the back the tenth and eleventh spaces were dull. In the axillary line dulness extended up to the eighth rib. The liver and spleen could not be felt by abdominal palpation. The tongue was clean and the appetite was fair. He did not complain of anything except that he felt a little weak and that he had a certain amount of pain and discomfort in the epigastric region. It was thought to be an ordinary case of catarrhal jaundice. He was ordered a purge of calomel, followed by magnesium sulphate in the morning and a mixture containing 10 grains each of bismuth subnitrate and sodium bicarbonate three time daily.

The following notes were made during the progress of the case. "March 24th.—Patient is in much the same condition; he does not complain of any special discomfort. Jaundice is somewhat increased. Two grains of calomel were ordered to be taken nightly. April 2nd.—Nothing of note happened till this date when his temperature rose to 103·6° F. in the evening. During the last few days he has been rather restless and disinclined to move. His pulse-rate for the week has averaged 68 and his temperature has been quite normal. His appetite has been fair. April 3rd.—His temperature this morning was 100° and his pulse-rate was 88. Ten grains of quinine were ordered thrice daily. April 4th.—His temperature after rising to 103° in the evening became normal this morning. He appears much weaker to-day. Neither the spleen nor liver is enlarged and both appear normal in size. He is now extremely

jaundiced, the tears and saliva are tinged with bile, and the mucous membranes and tongue have a yellow tinge. The tongue is slightly furred. There is slight tenderness on pressure in the epigastric region. The bowels have been open once daily since admission, the motions being quite white. April 6th.—There has been no more fever but patient is in a lethargic condition. He will not trouble to answer questions, objects to taking medicine, and is very irritable. His pulse-rate is somewhat higher, averaging 80. He has been put on a milk and farinaceous diet. April 7th.—He is bleeding slightly from the gums to-day but the latter look normal and are not spongy. Lime-juice in doses of two ounces daily was ordered. April 8th.—Patient is in much the same condition. The skin itches considerably, especially over the chest and back. There are patches of erythema on his chest. Yesterday and to-day there has been slight diarrhœa, yesterday six motions and to-day three. The nightly dose of calomel is stopped. April 10th.—Patient is delirious to-day. He is dirty, passing urine and and fæces in his bed. He sometimes stands upon his bed and urinates on the floor. He is very noisy at times and strongly objects to taking any medicine. He was singing during the night. Tongue dirty and covered with thick fur. His face has become sunken and he has vomited twice. The vomit is tinged with bile. His skin over the chest and back is peeling in large flakes and is apparently itching greatly, as he is continually scratching himself. The pulse-rate is sometimes now as high as 90. The diarrhœa has ceased. A mixture containing five minims of liquor strychninæ and ten grains of ammonium chloride was ordered thrice daily. April 11th.—Patient was more quiet during the night as he had been given a sleeping draught consisting of 20 grains each of chloral and potassium bromide. He is talking coherently this morning but has again passed urine on the floor. April 12th.—Patient not so noisy to-day. He has not again soiled his bed but has passed urine on the floor. April 13th.—The urine was examined again to-day. It has a specific gravity of 1020 and an acid reaction. It contains much bile and traces of albumin. Microscopically it contains a few granular casts, a few blood corpuscles, and some crystals of leucin. The liver dulness to-day is much diminished in area. In front dulness commences on the right side of the chest along the costal margin, that is to say, at the level of the lower border of the eighth rib. The sixth and seventh spaces are resonant; the eighth and ninth spaces are dull. There is no dulness below the costal margin, nor can the liver be felt. In the right axilla there is dulness in the ninth, tenth, and eleventh spaces and behind on the right side in the eleventh space. The spleen is not enlarged. Hæmorrhage from the gums still continues but there is no vomiting now. Patient is more sensible to-day but he is restless and very weak. Pulse feeble and rapid, its rate being 120. There is distinct tenderness on pressure over the left lobe of the liver in the epigastric region. April 14th.—The patient is more delirious to-day. He is passing urine in his bed. Last night he had a small rise of temperature to 99·4°. In the front of the chest the liver dulness has practically disappeared. There is only impaired resonance along the border of the ninth rib in front. The pulse-rate is 112. April 15th.—Patient is in a semi-comatose condition to-day. He is lying on his back with his eyes shut and occasionally murmurs. He cannot be roused. He is constantly expectorating in all directions. His pulse-rate is 134. He will not take any nourishment and has to be forcibly fed with milk. To-day there is some slight dulness in the sixth right space in front. The chest below this is resonant. His urine contained a trace of albumin. On evaporating some urine a few tyrosin crystals were found and leucin crystals as before. His head was shaved and cold compresses were applied. April 16th.—Patient was completely comatose to-day. His breathing was very shallow and his pulse feeble and rapid with a rate between 130 and 140. In the morning he was thought by the sick attendants to be dead. Both respirations and pulse became feebler and he died from exhaustion at mid-day." A post-mortem examination was asked for but was refused by his relatives.

I have no doubt that this was a typical case of acute yellow atrophy of the liver but until the mental symptoms became marked and vomiting occurred I thought that it was a severe case of catarrhal jaundice. When the patient became delirious and vomiting and bleeding from the gums occurred it was evident that a simple jaundice could not account for all these symptoms. When it was found that the liver dulness which had previously been normal was greatly diminished and that leucin crystals appeared in the urine there seemed little doubt of the diagnosis. I had no means at hand to determine the amount of urea in the urine and so I cannot say whether it was diminished or not. No tyrosin crystals were seen in the urine until the day before his death; the leucin crystals were, however, fairly numerous. Osler states that the total number of recorded cases is 240. About 70 per cent. of these have been women, so it appears to be a disease of extreme rarity in men. I could obtain no information as to the causation. Previously to this illness the man was perfectly healthy, there were no signs of syphilis, and being a Mahomedan he had probably never touched alcohol. The liver must have been greatly diminished in size, as it was only with very light percussion that even impaired resonance could be obtained over the hepatic area at the end of his illness. There was no great tendency to hæmorrhage; the only one that occurred was from the gums. No enlargement of the spleen was found, although this is generally stated to be the case. The jaundice was most intense but it did not show any tendency to increase with the advent of head symptoms; on the contrary, it appeared to be somewhat diminished towards the end. A peculiarity of the jaundice was that both the tears and saliva were tinged with bile. I much regret that no post-mortem examination could be held, as every case of this rare disease is worth recording.

Fort Lockhart, Samana, India.

ON DEEP ALCOHOL INJECTIONS IN FACIAL AND OTHER NEURALGIAS AND IN HISTRIONIC SPASM.

BY DR. F. OSTWALT.

FOR some years past I have made a special study of the treatment of facial neuralgia. My aim has been to find a therapeutic method by which a serious surgical operation might be avoided, even in very rebellious and chronic cases of tic douloureux, the uncertainty of the final result being too great to warrant such dangerous operations as those recommended in such cases. In some not too severe cases of supraorbital neuralgia I succeeded in relieving the patients by giving them once or twice daily, during a couple of weeks, local baths, lasting half an hour each, of superheated dry air by means of a special apparatus called by me "Thermaërophore."[1] It was not until 1904 that I was put in possession of a method giving entirely satisfactory results in more than 90 per cent. of all cases. The principle of the method alluded to depends in the main on the injection of nerve-destroying substances upon the nerve trunk, a treatment suggested for the first time in 1887 by Pitres and Vaillard and practically applied, since three or four years only, by Schlösser. I believe that I have improved upon this method in some essential points. We are now enabled to reach by our injections not only the third but also the second and first branches of the fifth nerve at the very point where they emerge from the apertures at the base of the skull. Consequently, the number of cases to be cured by these deep injections has considerably increased. The addition of cocaine or stovaine to the alcohol seems also to be a slight improvement.

I now proceed in the following way. Let us suppose that we have to deal with what I believe is the most frequent condition in Fothergill's disease, neuralgia of the second and third divisions of the fifth nerve. I screw my bayonet-shaped needle on a syringe filled with about a fluid drachm of alcohol at 80 per cent., mixed with a sixth of a grain of cocaine or stovaine. After having previously disinfected the mouth and cocainised the mucous membrane at the point of the puncture I introduce my needle directly behind the alveolus of the wisdom tooth into the mucous membrane of the upper fornix of the vestibule of the affected side of the mouth and pass it through the, here rather thick, submucous tissue. I then push the needle through the external pterygoid muscle or around its lower border until it touches the external pterygoid plate. Then I move the needle in the zygomatic fossa slowly and carefully upwards along the external pterygoid plate until it comes in contact with the

[1] Annales d'Oculistique, vol. cxxxiii., p. 197.

infra-temporal surface of the great wing of the sphenoid bone. Now I slide the point of the needle backwards in the corner between this infra-temporal surface and the before-mentioned external pterygoid plate as long as I feel the resistance of bone. As soon as this resistance ceases and the point of my needle encounters soft tissue I have arrived at the foramen ovale. I have to push the needle only a little (about a half to one line) further up in order to be sure that it touches the inferior maxillary nerve at the point of its emergence from the skull. I now inject very slowly, and with many interruptions, from one-third to two-thirds of a fluid drachm of my solution of cocaine or stovaine in alcohol, guiding the needle round about the foramen ovale and directing the jet of alcohol particularly towards those bundles which contain the nerve fibres supplying the affected parts of the head. The injection at the foramen ovale is soon followed by formication and torpor of the different branches of the inferior maxillary nerve and if there has existed a neuralgic paroxysm before and at the beginning of the injection it is, as a rule, cut short by this latter. As soon as the injection in the third division of the fifth nerve has been terminated I draw back the needle about a line, then I slide it forwards, always in contact with the bone, in the aforesaid corner between the infra-temporal surface of the great wing of the sphenoid bone and the external pterygoid plate, until I feel that the bone resistance ceases here again. This is the case at the anterior and median, rather sharp border of the infra-temporal surface of the great wing—i.e., at the boundary line between the zygomatic and the spheno-maxillary fossa.[2] The needle must now be pushed straight upwards about as much as two and a half or three lines in order to meet the foramen rotundum and the trunk of the superior maxillary nerve coming out of this hole. After some practice one feels if in pushing it up one directs the body of the syringe very slightly forwards in order to make the point of the needle slide backwards on the anterior surface of the upper part of the pterygoid process—I say, one then feels distinctly the small bridge of bone that above separates the foramen rotundum from the sphenoidal fissure.

After having thus ascertained that the point of my needle is exactly where I desire it to be I very slowly and with many pauses inject again about one-third of a fluid drachm of alcohol upon the second division of the fifth nerve at its point of emergence from the skull. In the rather infrequent case of simultaneous neuralgia of the first and second or the first, second, and third divisions of the fifth nerve I only need to push my needle, after the injection of the foramen rotundum, about a line more upwards. I then reach, after having passed over the afore-mentioned bridge of separating bone, the posterior lower end of the sphenoidal fissure, just at the place where the ophthalmic division of the fifth nerve passes from the middle cranial fossa to the orbit. A single puncture, followed by three successive injections, thus enables me to obtain a temporary incomplete paralysis of all the three divisions of the fifth nerve—i.e., an anæsthesia extending all over one side of the anterior half of the head from the vertex to the chin, including the nostril, the palate, and half the tongue. Even the masticatory muscles as a rule participate in this incomplete paralysis, to a certain degree at least.

I may say we are performing in this way a rather inoffensive, transient resection of the Gasserian ganglion. Transient it is, because the incomplete paralysis does not very often last more than a few hours or days. Sometimes it disappears only after some weeks, even after two or three months. It shows that the alcohol injections produce a degenerative process in the nerve, according to the experiments described years ago by Pitres and Vaillard. This degeneration is never more than temporary: the nerve always recovers its normal state and function, after a space of time varying from one case to another, as I have stated before—only the condition of pathological irritability which produced the neuralgia does not return at the same time, at least in the very great majority of cases. A single puncture will seldom be sufficient to cure the neuralgia. No doubt we rarely succeed the very first time in acting upon all altered nerve fibres together. Generally two, three, or four, sometimes even more sittings are needed in order to remove the pain entirely. But, as a rule, patients obtain great relief immediately after the first operation and this gives them courage and confidence to persevere in the treatment. I generally wait five or seven days between two interventions at the same place. This is the time, as a rule, that the œdematous swelling, which follows the injection, takes to disappear. In the case where, from the outset or after a previous injection at the foramina of the base of the skull, the neuralgia is localised in one of the peripheral branches of the fifth nerve I inject the alcohol solution on more peripheral, but nevertheless still sufficiently deep, points of the three divisions of this nerve, following therein exactly the precepts of Schlösser. The spot of the injection is then far backwards under the orbital vault for the terminal branches of the ophthalmic nerve, at the very end of the infra-orbital canal or groove for those of the superior maxillary nerve, and behind the ramus of the lower jaw for those of the inferior maxillary division of the fifth nerve. If these more peripheral injections do not completely triumph over the neuralgia I once more attack the suffering nerves at the apertures of the base of the skull.

Time can be gained by making the injections sometimes at the foramina of the base, sometimes more peripherally, because in that way one is not obliged to wait for the complete or nearly complete disappearance of the swelling which ensues. As a rule it is not advisable for operations upon the same branch of the fifth nerve to follow each other at too close intervals, because sometimes an injection, which is at first apparently quite inefficient, after a week's or a fortnight's delay leads to an entirely satisfactory result. It is evident that the technique of these punctures, especially of those at the foramina of the base of the skull, are not so very simple; they require a hand accustomed to rather delicate surgical work. The needle has to be directed with precision right on to the nerve, which is, of course, inaccessible to sight and touch; it has then to bring the nerve-destroying agent into contact with the nerve fibres. But we must not advance our needle any farther than absolutely necessary in order not to wound blood-vessels or vital organs in the neighbourhood. A perfect knowledge of the anatomy of the skull and of the varieties of its conformation is, of course, indispensable. It is evident that one succeeds only after some practice in obtaining a positive result in every case which is amenable to treatment by these injections—i.e., as has been mentioned already, in at least nine-tenths of the whole number. It is more than probable that in the remaining one-tenth the cause of the neuralgia lies within the cranial cavity. At any rate, it seems to me that facial neuralgia has much more often a peripheral origin than Pitres and Verger thought, guiding themselves by the efficiency or inefficiency of their cocaine injections *loco dolenti*.[3]

In order to show that one really is able, not only on the bare cranium but also on the intact head, to reach with the needle the three divisions of the fifth nerve at the points where they emerge from the apertures at the base of the skull, I injected melted red tallow on the dead subject in the Anatomical Institute of the Parisian Medical School, proceeding exactly in the same way as in the case of living patients. Then I dissected the head and convinced myself that the consolidated tallow included the nerve trunks at the desired points. I had the honour of demonstrating the preparation in question at a combined sitting of the Sections of Medicine and Neurology of the Fifteenth International Congress of Medicine at Lisbon. It illustrates in a very striking manner the superiority of my method. The so often affected second division of the fifth nerve particularly benefits by the improved process. Previously, the deeper branches of this division (the spheno-palatine nerves, the posterior dental nerves, the zygomatico-temporal nerve) could not be reached by the injections.

Up to the present I have treated by the aforesaid method of deep alcohol injections 60 cases of Fothergill's disease. 25 of these cases have been operated upon in different Parisian hospitals (Salpêtrière, Bicêtre, Beaujon, Hôtel Dieu, &c.) in presence of the medical officers or their assistants. All these medical men could bear testimony of the efficiency of my operations in almost all the cases I had to deal with.[4] In a few years, when I shall be able to relate the subsequent history of my patients, I shall publish a detailed statistical report on my cases. At the same time I shall give the names of the practitioners who kindly sent me

[2] Sometimes there is a rather prominent bone crest separating the zygomatic from the spheno-maxillary fossa. Then we have to pass our needle round this crest in order to introduce it into the spheno-maxillary fossa.

[3] Revue de Médecine, 1904, p. 34, &c.

[4] Note présentée à l'Académie de Médecine le 30 Mai, 1905, and G. Laporte, Thèse de Paris, 1905.

the patients not treated by me in the hospitals. It may be stated here that all the cases submitted to my injections belonged to the most severe form of neuralgia, the "grande névralgie" of Zimmern. Most of my patients had been suffering cruelly for a number of years. There are among the patients now cured not a few whose existence had been during the last 6, 7, 9, 10, 13, 16, and even 20 and 30 years, a real martyrdom. Many of my patients had been forced by the frequency and the violence of their paroxysms to abandon their work. More than one had previously undergone more or less important surgical operations (operation of Jarre, one or more neurectomies). It is hardly worth while to mention that in much more than half of the cases all, or nearly all, the teeth of one or both jaws on the affected side had been extracted. Needless to say that in all cases the usual toxic drugs had been taken, generally for a long period, without any lasting effect. Often an energetic electric treatment, even such as the much-vaunted treatment of Bergon é (daily applications of an intense constant current by means of a large electrode of at least half an hour's duration) had been continued constantly, sometimes even for years. A few patients had undergone with hardly any benefit a treatment by the x rays. As a matter of course syphilitic patients have not been operated upon before an energetic antisyphilitic treatment had proved unsuccessful. Inquiries as to other local (sinusitis, &c.) and general causes of neuralgia (malaria, diabetes) had not been forgotten either, in so much that only typical cases of Fothergill's disease were submitted to our injections. According to the statements of the patients operated upon these injections cause no more pain—generally even much less—than a neuralgic crisis. Previous injection of stovaine much reduces the pain. There is, moreover, no objection when operating upon especially timorous persons to the use of chloroform, or better, chloride of ethyl, so as to obtain general anæsthesia. Patients who have once benefited by these deep alcohol injections given during a neuralgic crisis and who have experienced the remarkably quick relief produced, return for a fresh treatment as soon as the slightest relapse occurs.

As regards relapses, they occur perhaps in one-third of all cases and then, as a rule, about five months after the first treatment. I have not yet followed most of my patients for a sufficiently long time to be entitled to quote absolutely trustworthy figures on this point.[1] Generally those relapses are much less severe than the original neuralgia and they are, as a rule, promptly relieved by one or two more injections. Considering that this treatment does not even force patients to interrupt their ordinary work and still less to take to their beds, the possibility of a relapse, existing after all treatments of neuralgia, need not frighten them particularly, as they may be quite convinced by our assertion that it will certainly be cured in a few days by the same method. It is just one of the great advantages of this proceeding that it may be repeated without the slightest danger on the same patient as often as necessary. For my part I have never observed any accident worth mentioning among several hundred deep alcohol injections of this kind which I have already performed. Although I am not yet entitled to speak categorically with regard to this point I think that frequently a single series of these injections delivers patients, once for all, even from the severest form of neuralgia. I am led to this view by the fact that several of my patients who had been suffering, in the most terrible degree, from trigeminal neuralgia for 4, 12, 13, and even a greater number of years, and who had become exceedingly emaciated by acute persistent pain, through want of sleep and from difficulty in nourishing themselves, are already free from neuralgia for more than a year after a single series of two, three, or four such injections and have recovered long ago their former weight and good looks. (The weight of some of my patients has increased in the few weeks succeeding the injections by 10, 16, and even 30 pounds.) At any rate, the innocuousness of the process authorises me to recommend it, most urgently, in all cases where a previous internal treatment has not rapidly cured the neuralgia. I even go further; I venture to say that it is preferable to have recourse to the deep alcohol injections rather than to intoxicate patients by strong doses of opium, morphine, aconitine, &c.

[1] It would seem that our injections are not more often followed by relapses than neurectomies. Look, for instance, at the recent statistics of so skilful an operator as Professor Krause of Berlin (Berliner Klinische Wochenschrift, 1906, No. 12). 11 only of his 55 neurectomies remained free from recurrence of their neuralgia.

As has already been stated by Professor Schlösser, the *modus agendi* of these alcohol injections shows itself very clearly when they are directed not upon sensory but upon pathologically excited motor nerves; for instance, in case of histrionic spasm. Like Schlösser, I have in ten of these cases obtained excellent results by injecting alcohol at 70 or 80 per cent. mixed with one-sixth of a grain of stovaine on the trunk of the facial nerve at its point of emergence from the stylomastoid foramen. My patients had been, as a rule, suffering from spasm for a number of years. So great had generally been the strength of the clonic contractions of the facial muscles that sight had been considerably troubled on the affected side. This trouble had been brought on not only by the continuous little oscillations of the eyeball, but undoubtedly also by the astigmatic deformation of the corneal curvature due to the pressure of the constantly contracting orbicularis palpebrarum muscle. Some of my patients have been induced to ask for the operation more perhaps on account of these ocular troubles than on account of the grimace, although this latter was a great annoyance to them in social life. By following exactly the rules established by Schlösser one succeeds, as a rule, perfectly well in abolishing the pathological irritation of the nerve without producing any visible paralysis of the facial nerve. Those patients all of whom had tried without any result every possible therapeutic means recommended for the contractions, do not know how to express their gratitude when they are delivered from their spasmodic tic by one, two, or three, rarely more, injections.

Just as alcohol applied to the facial nerve is able to modify this motor nerve in such a manner that the condition of chronic irritation yields without the conductibility of the nerve being annihilated, so also after such an injection, made upon a sensory nerve, the chronic pathological irritation—i.e., the neuralgia—disappears without the function of this nerve being destroyed, at least for any length of time. I here speak quite generally of "sensory nerves" and "neuralgia," because it is a matter of course that the efficiency of these injections is not limited to facial neuralgia. On this point, too, I fully agree with Schlösser.

I have already treated a considerable number of cases of sciatica, often even of the most rebellious chronic kind. One, two, or three injections, as a rule, of alcohol solution made upon the trunk of the peroneal nerve (under the head of the fibula), or of the external saphenous nerve (at the calf), or upon the trunk of the sciatic nerve (at the thigh just underneath the gluteal fold or, if that does not yet suffice, in the great sciatic notch) cure the neuralgia, in the immense majority of cases very rapidly. As in the case of trigeminal injections, pain is generally relieved even during the injection and it is in the same way replaced by a not painful sensation of formication and temporary torpor of the member. It may be stated *en passant* that sciatica caused mechanically by deep varicose veins is not to be cured by the alcohol injections. I scarcely need to remark that before making the diagnosis of sciatica we ought to assure ourselves thoroughly that we have not to deal with an affection of the spinal cord. It is evident that in this latter case interference would be useless; the method would, however, do no harm in this case either. Besides sciatica I have treated in the same way severe neuralgias of the anterior crural nerve, of the obturator nerve, of the external cutaneous nerve of the thigh, of the ulnar, of the cervical plexus, &c. Patients who had been unable to work for weeks and months in consequence of their neuralgia could often return to work some days after our treatment. These deep alcoholic injections are therefore to be considered as a very valuable therapeutic progress. They ought to be strongly recommended, not only in facial but also in all other neuralgias, as well as in muscular cramp (histrionic spasm, &c.). This is why I thought it advisable to make the medical profession at once acquainted with my personal experience of the action of these injections.

Paris.

CARDIFF CITY ASYLUM.—At a meeting of the Cardiff asylums committee held on May 29th it was reported that the capital expenditure up to date was £230,669. The committee decided to recommend the city council to advertise for a medical superintendent at a salary of £650 per annum, to be raised annually by £50 until £800 is reached, with unfurnished residence.

A CASE OF ACUTE POISONING WITH OIL OF EUCALYPTUS.[1]

BY JOSEPH BENJAMIN,

HONORARY SECRETARY TO THE AHMEDABAD MEDICAL SOCIETY.

ON March 22nd I was called at about 11 A.M. to see a Kunbi child, aged about eight years. He had been suffering from remittent fever since March 15th and was being treated for this by a medical practitioner who had also given a bottle of eucalyptus oil to be sprinkled on the patient's bed as he had come from Sarashur where plague was raging. The patient was to have a dose of a diaphoretic mixture at 5 A.M. but one of his female relatives by mistake gave him instead of this six drachms of the eucalyptus oil that was in the bottle. He vomited half an hour afterwards and at 7 A.M. he became unconscious. The medical attendant who saw him at the time gave him a dose of Carnrick's liquid peptonoids to sustain his strength, after which he vomited again. The vomited matter smelt strongly of eucalyptus oil. As the patient did not improve another practitioner was called in consultation at 8 A.M. and gave the lad common salt with warm water and tickled his throat with a feather, after which he vomited thrice again. The vomited matters still smelt of eucalyptus oil. The medical man then prescribed for the child aromatic spirit of ammonia and spirit of chloroform in ten-minim doses, each with water, to be given every two hours, as he found the pulse to be weak. As the patient continued unconscious I was sent for at 11 A.M., as already mentioned. On my arrival the unconsciousness still continued, the pupils were very much contracted, the breathing was somewhat laboured, and there was hiccough every four or five minutes. Urine had not been passed since 6 A.M. The bowels were moved once at about 9.30 A.M. and the abdomen was tympanitic. The boy's temperature was 99·8° F. and his pulse and respirations were respectively 128 and 36 per minute. Cold water was poured over his head for 15 minutes and mustard plasters were applied to the nape of the neck and to the abdomen. A short time after this his bowels acted but as the tympanites did not abate he was given an enema of warm water when only yellowish liquid matter came away. He was then given a mixture containing aromatic spirit of ammonia, spirit of ether, spirit of chloroform, compound tincture of cinchona, and tincture of digitalis. At about 12.30 P.M. he became slightly conscious. On being asked to put out his tongue he tried to do so but could not bring it outside the teeth and lapsed into unconsciousness again. Ice was then applied to his head. He passed urine at 2 P.M. and regained consciousness at 3 P.M. On the next morning the symptoms caused by the eucalyptus oil had disappeared but the fever from which he had been suffering still continued.

Examples of poisoning by eucalyptus are somewhat rare. Three cases occurring in adults were recorded in THE LANCET of Sept. 30th and Dec. 30th, 1905. A semi-comatose condition was observed in all these three cases. In the case seen by me the comatose condition was more marked because the quantity swallowed was much larger than in the above instances and moreover the patient was a child. Eucalyptus oil, although generally considered to be innocuous, may therefore act like a narcotic, though no death has, so far as I am aware, been reported to have resulted from poisoning by it. Bruce's "Materia Medica" states that eucalyptus oil contains 70 per cent. of terpene and that its action is like that of turpentine oil when taken internally.

Ahmedabad, British India.

[1] Abstract of a paper read before the Ahmedabad Medical Society on March 27th, 1906.

LLANELLY HOSPITAL.—At the annual meeting of the subscribers to the Llanelly Hospital held recently it was stated that 257 patients were admitted last year as compared with 244 in 1904. The total income of the institution amounted to £1838 and the expenditure to £1244. The committee alludes to the generosity of Mrs. Buckley who defrayed the entire cost of a children's ward as a memorial to her husband, the late Mr. H. C. Buckley, for many years medical officer of health of Llanelly.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF TETANUS AFTER CHILDBIRTH SUCCESSFULLY TREATED WITH CANNABIS INDICA.

BY ANNA M. SEATON SMITH, M.B. LOND.,

CHURCH OF ENGLAND ZENANA MISSION HOSPITAL, PATALA, PUNJAB.

DURING two and a half years' work in the Punjab I saw some 12 or 13 cases of tetanus of which all but two occurred after childbirth. The first nine or ten were all fatal. I was then led to try cannabis Indica by hearing that the smoking of bhang during the spasms was believed by some natives to give temporary relief. The first patient for whom it was used only stayed in hospital 12 hours. During that time she had over a drachm of the tincture and also had her jaws opened under chloroform and was fed by a stomach tube. There was some improvement in her condition but her friends insisted on taking her away and would not take medicine with them. She died two (?) days later.

The next two cases occurred respectively in November and December, 1905. The first of these patients, who was a Mahomedan, aged 30 years, did not come under observation until ten days after labour and at that time had well-marked symptoms of tetanus. The masseters, the muscles of the neck, and the abdominal muscles were all rigid; risus sardonicus was marked and the jaws were firmly clenched. Paroxysmal contractions were frequent but not severe. The patient first noticed the stiffness of the jaw seven days after labour but had only become worse during the 24 hours before being brought to the hospital. She refused to stay in the hospital and therefore had to be seen at her home as occasion and opportunity arose. She was put on large doses of cannabis Indica, taking 15 minims of the tincture every three hours for the first 12 hours, and after that every four hours for the next three days. The dose was then reduced gradually till by the ninth day she was having six minims three times a day. The treatment at once stopped the increase in the severity of the symptoms; the spasms became less frequent, though rather stronger at first; the rigidity decreased and the jaw was less fixed. From the third day improvement was more marked and continued steadily till by the fourteenth day the patient was well and able to walk to the hospital.

The second patient, who was a Hindu, aged 25 years, was admitted to hospital 20 days after labour. She had been carried on a bed about 20 miles. The history that was given was very confused, but apparently after labour "the womb came down" and was replaced by the woman who was in attendance. On the tenth day she had a fall and "the womb again came down" and was again replaced. On the sixteenth day she noticed stiffness of her legs; on the nineteenth day this became much worse and all the symptoms of tetanus rapidly developed. On admission she had rigid contraction of the muscles of the jaw, the neck, the abdomen, and the thighs. The thighs were flexed and widely abducted and could not be brought together. The patient had a particularly distressing frequent cough. Her chest was full of moist sounds but she could expectorate nothing, as the cough was always arrested by the spasm which it induced. Her general condition was one of such distress and danger as to be most painful to witness and I had no hope of her recovery when she was admitted. She was treated similarly to the case above-mentioned but the cannabis Indica was pushed even more as she was under constant observation. There was at once a very markedi mprovement; the cough became less troublesome, the spasms less frequent, the tonic rigidity less marked, and the whole condition much alleviated. On the sixth day she walked round her bed and on the thirteenth day was discharged free from all symptoms except a slight stiffness of the lower limbs. The uterus was not curetted in the first case but it was in the second, though not till the fifth day after admission. In this case, which was by far the more severe of the two, indeed the worst I had seen, I am inclined to think the infection occurred not at labour but ten days

later when the uterus was replaced the second time. In both cases the child did well.

A FATAL CASE OF ENDOCARDITIS IN A YOUNG CHILD.

BY JOHN O. SYMES, M.D. LOND., D.P.H.,
ASSISTANT PHYSICIAN AND BACTERIOLOGIST, BRISTOL GENERAL HOSPITAL.

ENDOCARDITIS is a rare condition in children under two years of age unless it be of congenital origin or consequent upon some infective fever. Dr. J. F. Goodhart and Dr. G. F. Still record that of 169 cases of endocarditis in children only 16 were under four years of age, and of these 12 were probably congenital. I have therefore thought that the following case is worthy of record.

The patient was a girl, aged two years, who attended the out-patient department of the Bristol General Hospital on June 27th, 1905, and was said by her parents to have been ailing since an attack of vomiting and diarrhœa 14 days previously. Although this attack had passed off the child was left pale and so weak that she could hardly walk; they thought, too, that she was wasting. There was no history of previous illness except some enlargement of the cervical glands six months previously. A loud systolic bruit was audible at the heart's apex and was conducted in all directions. The child was admitted to the hospital on July 4th. She was markedly anæmic and thin, the respiration was rapid, and there was orthopnœa. The apex beat was in the fifth and sixth spaces in the nipple line, the left border of the heart was one inch outside the nipple line, and the right border was at the mid-sternum. At the apex the first and second sounds were audible and a loud systolic bruit was carried out to the axilla and heard over the back. The pulse-rate was 136 and the respiration rate was 68. Both liver and spleen were just palpable beneath the costal margin. There were shotty lymph glands in the triangles of the neck, the axilla, and the popliteal spaces. The temperature was subnormal. Examination of the blood showed that a cubic millimetre contained 4,800,000 red cells and 44,000 white ones; the hæmoglobin was 70 per cent. During the six weeks of the child's stay in hospital her condition gradually became weaker and the heart's action and respiration more rapid. She died on August 10th. There were never any signs of arthritis, of hæmorrhage into the skin, or of rheumatic nodules. The temperature never reached 100° F. until August 7th and 8th (i.e., two days before death), when it rose to 101·6° each evening; morning temperatures of 96·8° were recorded on July 28th and August 1st and 7th, but the usual daily range was between 97·8° and 99·6°. The pulse-rate varied between 130 and 160 and the respirations between 50 and 70 per minute.

A post-mortem examination showed that the edges of the mitral valve were studded with recent minute vegetations. The wall of the left ventricle was hypertrophied and the chamber dilated. There were no suppurative foci found throughout the body. A stained section of a fragment of the mitral valve showed the vegetations to be crowded with a diplo-streptococcus both on the free surface and on the deeper parts. The organism was larger than any specimens of the diplococcus rheumaticus that I have seen. It retained the stain if treated by Gram's method. Unfortunately, I left Bristol on the day following the post-mortem examination and consequently did not see the cultures prepared from the spleen. The naked-eye appearances were those of rheumatic endocarditis and the hypertrophy of the left ventricle would indicate that this must have been of longer duration than might have been supposed from the history supplied by the parents. Although the rapidly fatal termination of the case suggested a malignant endocarditis, yet no septic focus could be discovered nor were large vegetations, or ulceration of the mitral valves, or infarcts in organs found at the post-mortem examination.

Clifton, Bristol.

PENALTY INCURRED BY A WATER COMPANY.—The Tredegar (Monmouthshire) bench of magistrates imposed a penalty of £100, with 30 guineas costs, upon a water company which neglected to supply water to ten houses at Aberbargoed.

Medical Societies.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on May 23rd, Dr. J. K. Kelly, the President, being in the chair.—The following specimens were shown:—Dr. J. Nigel Stark: Abscess in the Ovary, the Tube not being affected; Adhesions to the Cæcum and Appendix.—Dr. Russell: (1) A Large Fibroid of the Uterus removed for severe hæmorrhage; (2) Multiple Fibroids of the Uterus removed for pain; and (3) Multiple Fibroids of the Uterus with Adherent Tubes and Ovaries.—Dr. J. M. Munro Kerr: (1) A Large Unilocular Cyst complicating Pregnancy; and (2) Tubal Pregnancy, the tube being unruptured.—The President: A Sarcomatous Tumour of the Uterus with early Pregnancy.—The President and Dr. A. Louise McIlroy gave notes, with lantern and microscopic demonstration of a case of Pregnancy occurring in a Graafian Follicle. A brief outline of the literature of ovarian pregnancy was given, with a short description of the best known cases, including those of Koumer, van Tussenbroeck, Thompson, Mendes de Léon, Holleman, and the latest one by Freund and Thomé. In the present case the patient, aged 33 years, had been married for 12 years and had had five children, the last one being born two and a half years before she came under observation. She was admitted to the Glasgow Royal Infirmary on Jan. 25th, 1905. She had had an attack of severe pain in both iliac regions in the beginning of December, 1904, after a period of six weeks' amenorrhœa; this pain was followed by a hæmorrhagic discharge from the uterus which lasted for three days and then returned in four days, lasting that length of time. The discharge returned in a fortnight and was present when the patient was admitted to the infirmary. On examination there was found to be tenderness over the left iliac region but no tumour was felt. Per vaginam the cervix proved to be in the ordinary situation, the uterus to be normal in position and somewhat enlarged, and the left appendages which formed a considerable mass were tender to pressure. Extra-uterine pregnancy was diagnosed but as there was no hæmatocele operation was delayed for some days. As the discharge still continued the abdomen was opened on Feb. 6th and a small blood cyst was found in the left ovary; this was removed with the tube. On the right side the adnexa were normal. No blood was found in the peritoneal cavity. Recovery was uninterrupted. The specimen was of the size of a Victoria plum. In the upper part was the normal ovarian tissue, pale in colour; the lower part was rough and deeply stained with hæmorrhage. The tube and mesosalpinx were normal. Subsequent microscopical examinations of the tube showed normal ciliated epithelium. The blood mass in the ovary was divided into two parts and one portion was cut into sections and examined under the microscope. No embryo was found. The ovum was discovered to be imbedded inside a Graafian follicle, the walls of which were found to contain lutein tissue. The walls of the ovisac were much thinned out in the lower portion of the specimen where rupture would have taken place later. Strands of amnion and chorion were found in the blood mass with degenerated chorionic villi. In some places masses of trophoblast were seen in contact with the layer of canalised fibrin. Masses of syncytial cells were also seen in the blood clot. The ovum had been imbedded on a layer of connective tissue inside the lutein cell layer; nowhere were decidual cells found. The whole ovum was completely surrounded by ovarian tissue which contained follicles in its substance in the upper portion. Two corpora lutea were found in the ovarian tissue. The illustrations comprised drawings of the specimen before cutting into the interior and also sections of villi in the centre of the blood mass and lying on fibrin layers, &c.—Dr. John Lindsay said that this was the first case published in Scotland and was therefore of great interest to the society.—Dr. Munro Kerr had had a similar case two and a half years ago but had not as yet fully published it; his specimen was shown at the Edinburgh Obstetrical Society and had been seen by several eminent gynæcologists since. The patient had had symptoms of extra-uterine pregnancy with severe pain, and intra-uterine pregnancy was also present. At the operation an enlarged ovary was found with tube intact; the uterus was enlarged and soft. The patient was delivered at full term of a healthy child. The specimen showed a six weeks pregnancy, the ovum being imbedded

in the ovarian stroma; a corpus luteum was present and the remains of the embryo were found. Dr. Kerr said that these cases of ovarian pregnancy proved the fœtal origin of the syncytium and also cleared up many points on the imbedding of the ovum.—The subsequent business of the meeting was the election of office-bearers. Professor Budin of Paris was elected an honorary president and Dr. E. H. L. Oliphant was unanimously elected President of the society.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—A meeting of the section of surgery was held on May 11th, Sir Arthur Chance, the President, being in the chair.—Sir William Thomson read a paper on a further series of cases of Enucleation of the Prostate. He described the more important of 18 cases and discussed various points of interest which had been noticed. One of the specimens showed weighed six and a quarter ounces and one ten ounces, less a few grains. He described the after-treatment of the cases, the management of various complications, and discussed continuous severe hæmorrhage from the prostate. For this he had carried out enucleation with success. He believed this was the first time that the operation had been reported, as undertaken for hæmorrhage only, and he maintained that it was the proper treatment where all other means failed.—Sir Thornley Stoker expressed himself in doubt as to the accuracy of statistics concerning the mortality resulting from operation for prostatic enlargement. The time required for prostatic enucleation, in his experience, varied. He had enucleated a large prostatic growth in two minutes but in another case in which the growth was small the enucleation took half an hour. He recommended benzoate of sodium as a useful drug for promoting acidity of the urine. He considered the Trendelenburg position attended by danger in the case of aged patients.—Sir Arthur Chance favoured operative measures directed towards the relief of patients suffering from the effects of senile prostatic enlargement. He had found large prostates easy to deal with and he had frequently noticed that small prostates gave the most trouble. In fatal cases the cause of death was usually intra-thoracic complications. He regarded the Trendelenburg position as of great assistance and he had not found it attended by any obvious risk.—Sir William Thomson, in replying, stated that there was no direct relationship between the degree of prostatic enlargement and the intensity of the symptoms. He alluded to cases of death following suddenly after operation and which were due evidently to embolism. With regard to washing out the bladder, he usually did so through the urethra 48 hours after the enucleation.—Dr. K. E. L. G. Gunn read a note on Bladder Tumours and illustrated his remarks with the aid of a series of lantern slides.

Reviews and Notices of Books.

A Text-book on the Practice of Medicine designed for the Use of Students. By JAMES MAGOFFIN FRENCH, M.D., Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Illustrated by 10 full-page plates and 50 wood engravings. London: Henry Kimpton. 1904. Pp. 780. Price 16*s.* net.

NOTWITHSTANDING the admitted existence of many excellent text-books on the practice of medicine the author, from an experience of nearly 25 years as an instructor, is convinced that this book cannot fail to meet the requirements of medical students. This sanguine expectation appears to be based upon certain features which, in the author's opinion, distinguish the present volume from its rivals in the field. These features are enumerated as follows: the statement only of those facts of medicine which are accepted by the best authorities; their expression in simple, concise language and in logical sequence; the suppression of indications of personal experience; the omission of the "pleasant diversion of case reports"; and the mention of the names of authorities only when it seemed improper to omit them. Most students will agree broadly that many of these features are to be desired in a text-book; it is better to have the facts sifted and the material predigested, while simple, concise language is a boon and a blessing if only the facts are not thereby packed too closely for due apprehension. The difference might almost be indicated in terms of art as being that which separates the work of an impressionist from that of a Pre-Raphaelite. Broad effects probably leave a more lasting impression than can be obtained from consideration of a picture crowded with detail. To convey the sense of proportion there must be some marks of individuality and we venture to think that this is lost to a great extent when personal experience is kept in the background. It is difficult to predict how a student will be affected by any text-book but it is safe to assert that in general he prefers to have some indication of the relative importance of the facts with which each page is crowded. It is not wholesome diet when all materials are presented as though they had the same monotonous nutritive value.

Having thus relieved our mind of the thoughts suggested by an obvious strained desire for conciseness of expression it remains to consider the work before us in greater detail. It is divided into three sections, termed respectively "Principles of Medicine," "Practical Medicine," and "Clinical Methods of Examination." The first section deals with the classification of diseases and with their etiology; then some general pathological conditions are considered, such as disturbances of nutrition and metabolism, changes in the blood and circulation, fever, inflammation, and regeneration, while some 15 pages are devoted to the bacteria of disease, including infection, antagonism of infection, and immunity. This section has very marked merits in presenting in form convenient for reference many of the pathological processes which are constantly recurring in the study of diseases. The student will rise from its perusal feeling that there is a distinct connexion between his pathological work and the broad subject of medicine. It is a distinct advantage to have this grouping of material in the prefatory pages where it can indicate the relationship of the various diseases more helpfully than if the same information had been scattered through the volume under the names of the different diseases.

The second part, on Practical Medicine, is naturally the greater portion of the volume. It commences with the infectious fevers, typhoid fever being assigned the first place. In the 30 pages devoted to this a singularly complete account is rendered—in particular we may direct attention to the section dealing with the special symptoms and complications which leaves but little to be desired. Typhus fever is not so favoured and betrays in an aggravating fashion the desire for conciseness and simplicity; in one paragraph we have noted three sentences consisting of only four or five words each, and the effect is somewhat electrifying. The other infectious diseases follow in due order, the "fourth disease" (rubella scarlatinosa) being placed after German measles and acute rheumatism, and gonorrhœal infection being placed between erysipelas and syphilis. The subject of tuberculosis is dealt with in great detail, all forms of tuberculosis being considered in consecutive pages instead of being scattered about in different parts of the volume under the heading of the special organ affected. We note with pleasure that although due importance is assigned to the infectious nature of tuberculosis the author recognises the existence of individual peculiarities which are to be regarded as indications of vulnerability. Since the recognition of the tubercle bacillus many writers have appeared to ignore those individual characteristics which to a large extent account for the frequency of the tuberculous family history. To avoid repetition the treatment of tuberculosis is considered in general terms at the end of the section, the special symptoms—e.g., fever, sweating, cough, hæmoptysis, and diarrhœa—being dealt with separately.

Frequent exceptions to this admirable plan have been necessitated and short paragraphs on the treatment of tuberculosis of special organs sometimes occur rather unexpectedly.

A short section is devoted to infectious diseases common to man and the lower animals, which includes glanders, hydrophobia, anthrax, and similar diseases, and after this the affections due to animal parasites are considered. No exception can be taken to the assignment of the first place to malaria but it may cause some surprise to find it followed by dysentery, small-pox, vaccination, and chicken-pox, which in turn are succeeded by the diseases caused by nematodes and by cestodes. Splenic affections are dismissed in a summary fashion and those of the thyroid introduce a curious instance of Americanism in the term "goiter." While the account of valvular diseases of the heart is in general commendable we note that students are told that in aortic incompetency a double to-and-fro murmur can sometimes be heard by auscultation over the carotid and femoral arteries; there is no explanation of the mode in which the systolic murmur is produced (it is surely merely the result of undue pressure of the stethoscope), and to hear a diastolic murmur in the femoral would scarcely suggest aortic regurgitation to most clinical observers. The section relating to the respiratory system does not call for any special comment beyond mention of the treatment of hæmoptysis by placing elastic bands or other modes of constriction round two or three of the extremities and of the brevity and uncertainty of the directions for the treatment of spasmodic asthma.

Much space is saved in the section on Diseases of the Digestive System by the frequent employment of cross references, but some conditions—e.g., la perlèche, Riga's disease, glossitis desiccans, and hemiglossitis—are so briefly mentioned that but little information is conveyed. On the other hand, appendicitis receives lengthy consideration, the diagnostic indications being very carefully detailed and the directions for the determination of the resort to operative measures are discussed with sufficient caution and the dangers of procrastination are duly enforced. In the description of enteroptosis (Glénard's disease) the treatment is dismissed in five lines and there is no mention of any question of surgical measures. The facts connected with the occurrence of jaundice and of ascites are usefully grouped in separate sections, although it is admitted tha they are merely symptoms and not diseases. The description of chronic interstitial nephritis is not quite in accordance with the classification generally adopted in this country inasmuch as three forms are described: (1) as a primary affection; (2) as a manifestation of arterio-sclerosis; and (3) as a late result of chronic diffuse nephritis, in which the parenchymatous nephritis passes over into the interstitial form. Constitutional diseases and intoxications form the subjects of two brief sections and then the diseases of the nervous system are detailed in a long section of great inequality. So far as we have been able to judge no important condition is overlooked but many are so cramped for space that for all practical purposes they might almost have been omitted; this is especially noticeable in connexion with the accounts of the different forms of spastic paralysis and the various conditions grouped under the heading of "choreoid affections." The accounts of conditions of more common occurrence, such as locomotor ataxy and cerebral hæmorrhage, are free from this fault of undue compression and may be read with pleasure and profit.

The third part, which treats of Clinical Methods of Examination in some 40 pages, deals with the chemical and microscopical examinations which are applicable to clinical study and an attempt is made to include information which may be serviceable to the general practitioner without the use of apparatus to be found only in a fully equipped laboratory. This limitation permits the inclusion of much that will be found to be useful but it is evident that it only allows the fringe of the subject to be touched upon.

From the foregoing review it will be evident that this book contains many features which should render it acceptable to the rising generation of medical students. This conviction has prompted the indication of sundry blemishes which appear to be capable of removal with the issue of a new edition, for which there will probably be an early call. While deprecating an undue straining after brevity, we welcome and appreciate the general skill with which the author has eliminated many theories of little value and many discussions which would weary without affording any real advance of knowledge. The plates and wood engravings are adequate without being in any sense remarkable; the temperature charts and small engravings are more satisfactory than many of the more pretentious plates.

On Carbohydrate Metabolism (A Course of Advanced Lectures in Physiology delivered at the University of London, May, 1905, with an Appendix on the Assimilation of Carbohydrate into Proteid and Fat; followed by the Fundamental Principles and the Treatment of Diabetes dialectically considered). By F. W. PAVY, M.D. Lond., LL.D., F.R.S., Honorary Physician to King Edward VII. Hospital; Consulting Physician to Guy's Hospital. London: J. and A. Churchill. 1906. Pp. 138. Price 6s. net.

Dr. Pavy's writings on the subject of carbohydrate metabolism and diabetes are always of interest and importance to students of this fascinating problem, embodying as they do the views of one who has devoted his life's work to this branch of physiology and pathology and who has pursued the path of investigation with exemplary diligence and pertinacity. The little book before us sets forth the mature conclusions to which he has come. It is divided into three parts, a series of lectures—here amalgamated—extending over 74 pages, and an appendix divided into two parts dealing respectively with the assimilation of carbohydrate and with the nature and treatment of diabetes.

The author's antagonism to the theory of glycogenesis as usually held is well known; he here dismisses this view in a few words and passes on to enunciate his own position. Put shortly, this is that so far from the passage of absorbed carbohydrate from the intestine to the liver being a normal process, it is only when an undue amount of sugar is present in the alimentary canal that it reaches the portal system at all. Normally such material is taken up by the cells of the intestinal villi and then disappears from view. The mechanism by which this phenomenon occurs is as follows. The epithelium of the villi assimilates the sugar present in the intestine and converts it into its own protoplasm. We have here not a passive process of osmosis but a vital assimilative action. The epithelial cells then re-excrete the carbohydrate material into the cavity of the villi and there it is taken up by the lymphocytes which abound in this position and is again assimilated—that is to say, it becomes an integral part of the living substance of the lymphocytes just as it did of the epithelial cells. Subsequently the lymphocytes, which are carried into the thoracic duct and thence into the veins, undergo spontaneous disintegration (autolysis) and set free in the blood the actual materials which are used by the living cells for their nutrition. It is owing to the fact that the carbohydrate matter traverses the blood in the form of an organic compound—attached to the side-chains of the protoplasm of the lymphocytes—that we fail to find any considerable quantity of it circulating in a free state. Whenever such free sugar passes into the blood it is at once eliminated in the urine. After a sufficient quantity of carbohydrate food, however, some sugar does enter the blood and if there is enough of this to overtax the activity of the liver in removing it then alimentary glycosuria results. It may

be asked how on the theory before us sugar can reach the blood at all. If the epithelial cells re-excrete the absorbed carbohydrate as sugar then, so far as the theory goes, we might as well look on the process as one of mere osmosis; the result will be the same. Yet, to account for any absorption of sugar into the portal system, as admittedly occurs, either this must be the process at work or some osmosis must occur alongside of the vital action. Further, since peptone disappears from view as completely as sugar in the process of absorption it would appear probable—and Dr. Pavy seems inclined to adopt the hypothesis—that the lymphocytes may also be the carriers of proteid to the tissues. But if they are the sole means of conveyance of both proteid and carbohydrate material to the whole of the body an immense number of these minute cells must come into action at each meal and it seems doubtful whether the total number of lymphocytes available is sufficient for the task. Dr. Pavy, indeed, speaks of them as multiplying in the villi on the absorbed food just as bacilli do upon a nutrient medium. There does not appear to be at present any conclusive evidence of this enormous proliferation of lymphocytes in the villi, although these structures may be seen to be filled with lymphocytes in digestion.

Passing from the physiological to the pathological side of the subject we may admit that the theory before us is capable of explaining many of the features of alimentary diabetes but it seems to fail when applied to the composite form of the disease. Dr. Pavy holds that the sugar existing in the blood as the result of an alimentary defect acts as a poison to the tissues and ultimately causes them to break down into the very substance which is irritating them. This is so far opposed to known analogies in the action of poisons that overwhelming evidence will be needed to render such a hypothesis acceptable. In the realm of treatment Dr. Pavy is an advocate of a rigorous non-carbohydrate diet in cases of diabetes. In this we think that he is opposed to the views generally prevalent at the present day but in default of more certain knowledge it is impossible to be sure which is right.

We have not space here to discuss other interesting points dealt with in this book, such as the elimination of various sugars from the blood, the formation of fat from carbohydrate within the epithelium of the villi, the amount of glyco-proteid material existing in different proteid substances, the use of potato (here condemned) as a food for diabetics, or the comparative importance of sugar and of acetone bodies in the urine.

The book is full of material for discussion and will well repay perusal. Perhaps a little more care might with advantage have been taken in preparing the spoken lectures for publication, as here and there the English sets a bad example to younger writers. Such a phrase, for example, as "a faulty tissue breaking down" if paraphrased according to ordinary rules of grammar can only mean the katabolism of an unhealthy tissue, whereas the context shows that it is intended to mean an abnormal process of katabolism of tissue. Other examples might be quoted.

A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By ARTHUR R. CUSHNY, M.A., M.D. Aberd. Fourth edition. Illustrated with 52 engravings. London: Rebman, Limited. 1906. Pp. 752. Price 17*s.* 6*d.* net.

Professor Cushny states that the issue of a new edition of this text-book has been necessitated by the recent revision of the United States Pharmacopœia and that he has taken this opportunity to record such advances in the subjects of pharmacology and therapeutics as have been made in the last two years. While he asserts that the changes in the text are too numerous to be detailed he directs attention to the inclusion of the new features brought out by Embley and others in regard to the action of chloroform and its dangers and to the change in the views held as to the effects of wood-alcohol in man.

In reviewing the third edition of this book in THE LANCET of July 25th, 1903, p. 230, we mentioned that the author scarcely did justice to the vinous ethers contained in old and genuine brandy and we also drew attention to his sweeping assertion concerning carbolic acid that "its use as a remedy in constitutional diseases is entirely obsolete." The latter statement remains unchanged at p. 398, while, although the views of the effects of wood-alcohol are mentioned, these do not touch the point which we had in mind. It must be remembered, however, that Professor Cushny aims at presenting his subject from the experimental standpoint and that he endeavours to make the results of the laboratory investigator the basis of almost every statement, so that if judged purely from the experimental standpoint the work must be regarded as being extremely satisfactory. In professional work students will soon discover that by using it as a guide to therapeutics they have not received quite so much help as they anticipated and that they have still to seek in experience much that should be serviceable in the treatment of disease. On the other hand, they will realise that in having studied the subject of pharmacology as here set forth they have been pursuing a development of physiological investigation which has left comparatively little to unlearn. Professor Cushny's book should be extremely useful to all students preparing for examinations in pharmacology and therapeutics, both for its general accuracy and for the pleasant and easy diction adopted throughout.

LIBRARY TABLE.

The American Mosquito Extermination Society. Year-book for 1904-05. Edited by H. C. WEEKS and E. H. HALL, secretaries. New York. 1906. Pp. 116.—This volume of the proceedings of the Second Anti-Mosquito Convention held in the city of New York in December, 1904, contains much information concerning the life-history and habits of the culex, the anopheles, and the stegomyia. The address given by Dr. Qaitman Kohnke is particularly lucid. As originally delivered it was illustrated by views showing the live larvæ in water and the effect of oil upon them, thus demonstrating one of the methods of destroying these pests. The relations of the mosquito to malaria and yellow fever are portrayed and the author states that an epidemic of either of these affections is a proof of man's stubborn unwillingness to use the power of intelligent thought in prophylaxis. The volume is illustrated by some excellent plates. Dr. J. B. Smith's address on mosquito extermination in Jersey will also repay perusal.

Traitement des Maladies du Cœur, de la Goutte, et du Rhumatisme à Bourbon-Lancy. (*The Treatment of Diseases of the Heart, of Gout, and of Rheumatism at Bourbon-Lancy.*) By Dr. A. PIATOT. Macon: Imprimerie Protat Frères. 1905. Pp. 170.—In writing this small work Dr. Piatot's intention has been to bring before the medical profession the nature of the special thermal treatment carried out at Bourbon-Lancy. The therapeutic value of the waters at this health resort is discussed and it is shown how the beneficial effects of the waters are added to by means of regulating the diet and by the climatic advantages of the situation in which Bourbon-Lancy is placed. The diseases to which this particular form of treatment is particularly applicable are—rheumatism, especially in neurotic and excitable subjects; rheumatism occurring in patients who have suffered from rickets; osteo-arthritis; rheumatic affections of the valves of the heart, especially in cases where compensation is commencing to be established; and functional disorders of the heart. The details of the treatment are well explained and a perusal of the book will at once give a good idea as to the methods adopted at

Bourbon-Lancy and the satisfactory results which are obtained in the pathological conditions mentioned above.

Nursing in the Acute Infectious Fevers. By GEORGE P. PAUL, M.D., Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital at Troy, New York. Illustrated. London and Philadelphia: W. B. Saunders Company. 1906. Pp. 200. Price 4s. net.—The object of the author in this book is to place before nurses a volume which will be of practical value. The subject matter is written for the nurse alone. Great pains have been taken in preparing the sections on the care and management of each disease. The book is divided into three parts. The first part treats of fever in its general aspects, which is necessary as a basis for the study of each individual fever; in the second part each fever in discussed as to its cause, signs and symptoms, course, prognosis, care, and management; and the third part deals with practical procedures and information necessary in the management of the foregoing diseases or of value in understanding the nature and coarse of such diseases. Charts and illustrations are included. Tnere are some points open to criticism—e.g., in the chapter on the Reduction of Fever we think that the directions for the administration of cold packs might have been made more explicit. Again, we do not think that the author can mean that the eruption in typhoid fever always occurs at the end of the first week, but he states this to be the case. Chapter XXIII., which deals with Bacteria, might very well have been omitted. On the whole the book is an excellent one and will be of value to those for whom it is intended. It is well arranged, the text is clear and full, and the illustrations are good.

On the Nature, Causes, Variety, and Treatment of Bodily Deformities: in a Series of Lectures delivered at the City Orthopædic Hospital in the year 1852 and subsequently. By the late E. J. CHANCE, F.R.C.S. Eng., Surgeon to the City Orthopædic Hospital. With illustrations drawn on wood by the author from cases in his own practice. Edited by JOHN POLAND, F.R.C.S. Eng., Surgeon to the City Orthopædic Hospital. Second edition. In two vols. Vol. I. London: Smith, Elder, and Co. 1905. Pp. xvi.–315. Price 6s. net.—In reviewing the first edition of this book in 1862 we wrote: "Indeed a book that has so little of the narrow spirit of the specialist in it is rarely seen. It could only have been produced by a skilful anatomist, an acute physiologist, a sagacious surgeon, and—the numerous life-like illustrations by the author's hand attest—an accomplished artist." The editor of this, the second, edition has not attempted to alter the characteristic style of the lectures, he has merely omitte l some obsolete tables and notes. Recent investigations have been embodied in the form of copious editorial notes. The author's original drawings and notes of cases have been added to by the editor, so that the whole work includes drawings and clinical cases of deformities taken by the author and the editor from their own hospital and private practices. The volume contains an introduction and six lectures on the form of the human body and on congenital and acquired deformities. Mr. Chance's book is well known; the editor of the second edition is to be congratulated on its production and on having been allowed the opportunity of bringing the work up to present-day requirements.

KELSO COTTAGE HOSPITAL.—The arrangements for the establishment of a cottage hospital for the Kelso district are being carried through with commendable expedition and with every prospect of a highly satisfactory issue. The deed of constitution, which will provide a practical working arrangement between the old Kelso Dispensary and the new hospital, has been practically completed. It is intended that the funds derived from the bazaar shall provide all that is requisite in the way of buildings and equipment, while the funds of the dispensary will be made available for the current expenses of the institution and for the relief of the sick and the injured.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) "TABLOID" SODIUM CITRATE; (2) "TABLOID" MISTURA ALBA; AND (3) "TABLOID" OPHTHALMIC ARGYROL AND "SOLOID" ARGYROL

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

(1) THE addition of sodium citrate to cow's milk, as is well known, increases its digestibility and the salt is regarded to form with the caseinogen of the milk a sodium compound which is less dense and more readily absorbed than the corresponding calcium compound present in normal cow's milk. Milk may thus be modified in an important dietetic direction by merely adding to it sodium citrate, and for this purpose a tabloid is convenient, being first dissolved in a little water and the solution added to the milk in the proportion of two grains of citrate to each fluid ounce. (2) Mistura alba is recognised as a useful formula and the ingredients in the tabloid are commendably free from impurities. Each tabloid contains 15 grains of magnesium sulphate, 2½ grains of magnesium carbonate, and ⅓ minim of oil of peppermint. (3) Argyrol is described as a soluble organic silver compound which is antiseptic, non-irritating, and non-toxic in the strengths usually employed. Further, it is stated that argyrol does not precipitate albumin, an important property which enables it to penetrate the tissues. Solutions of from 5 to 50 per cent. are used in purulent and gonorrhœal ophthalmia and in lacrymal obstruction. It is also used as an injection (5 per cent.) in gonococcal urethritis and as a rectal injection (1 per cent.) in mucous and ulcerative colitis.

COCOA AND COFFEE WITH MILK.

(FUSSELL AND CO., 4, MONUMENT-STREET, LONDON, E.C.)

These preparations are evidently carefully made and from very good materials. They afford a very convenient means of extemporising a palatable, nutritious, and mildly stimulating beverage. They are stated to be prepared from full cream milk and this statement receives support from the results of our analysis. The fat, for example, amounted to 12·11 per cent. in the chocolate and milk preparation and to 11·14 per cent. in the cocoa and condensed milk preparation. Of course, part of this fat is due to cocoa but from the proportion of volatile fatty acids yielded it is clear that a large proportion of it is milk fat. The alkaloid caffeine was extracted from the coffee preparation in distinct quantity.

MARGARINE (IRIS BRAND).

(VERSCHURE AND ZOON, ROTTERDAM. LONDON AGENCY: 5, WATER-LANE, GREAT TOWER-STREET, E.C.)

Well-made margarine is a perfectly wholesome fat food and it is a pity that a prejudice has arisen against it on account of its being so extensively used as an adulterant of butter. The Iris brand has a quite satisfactory flavour which is barely distinguishable from that of genuine mild fresh butter. It is stated that it is churned from rich milk produced on Dutch farms. Our analysis showed 84·52 per cent. of fat, 1·65 per cent. of curd, 2·48 per cent. of salt, and 11·35 per cent. of moisture. So long as preparations of this class are honestly described they may be recommended as a source of excellent and palatable fat food.

OVALTINE.

(A. WANDER, 24, QUEEN VICTORIA-STREET, LONDON, E.C.)

This is a satisfactory preparation, made, it is stated, with malt extract, fresh eggs, milk, and cocoa. In addition, as was ascertained in our experiments, it contains lecithin, the peculiar fatty phosphorous constituent found in the yelk of an egg. The preparation has a pleasant flavour of malt

and of cocoa. There can be no doubt of its value as a special food and, moreover, it makes a very palatable beverage. It contains in excellent proportion materials which are available for the repair of tissue.

WORLDS' ANTISEPTIC AMMONIA.

(WORLDS & Co., SEYMOUR HOUSE, 17, WATERLOO-PLACE, PALL MALL, LONDON, S.W.)

Ammonia water when judiciously used affords an agreeable addition to the bath, while it is useful also for sundry other domestic purposes. This preparation shows an excellent strength, is clear, and is free from organic impurities. It contains, according to our analysis, a useful adjunct in the form of a well-known and mild antiseptic salt.

"HOUSE OF LORDS" PURE BARLEY MALT POT-STILL WHISKY.

(JAMES SAUNDERS AND CO., LIMITED, 15, CHARLOTTE STREET, FITZROY-SQUARE, LONDON, W.)

We have satisfied ourselves both by analysis and by the judgment of the palate that this whisky is genuinely described as an all-malt pot-still whisky. In spite of nothing but malt having been used and the distillation having been conducted in a pot-still the flavour is soft and smooth, a result which can only be obtained in the case of an all-malt spirit by maturing it in cask. The total secondary products amounted to 400 grammes per hectolitre of absolute alcohol present, of which the ethers amounted to 125. This is evidently a well-matured genuine malt whisky.

(1) ST. TIMOTHY WINE; AND (2) "VOTRIX" PURE GRAPE-JUICE CORDIAL.

(THE VINE PRODUCTS COMPANY, LIMITED, 74, GREAT TOWER-STREET, LONDON, E.C.)

St. Timothy wine is said to be made from pure unadulterated imported grape-juice. Our analysis of the wine gave the following results: alcohol, by weight 13·92 per cent., by volume 17·17 per cent., equal to proof spirit 30·09 per cent.; extractives, 9·56 per cent.; sugar, 7·41 per cent.; mineral matter, 0·54 per cent.; volatile acidity reckoned as acetic acid, 0·15 per cent.; fixed acidity reckoned as tartaric acid, 0·36 per cent.; and glycerine, 0·28 per cent. The wine is retailed at 1s. per bottle. We are sure that the wine is correctly described as being made from grape-juice but we cannot say that we like its flavour. The æsthetic qualities of the vintage wine are sadly wanting. There is no reason that we can see why it should not be wholesome. 2. Votrix grape-juice cordial contains about 60 per cent. of grape sugar and 2·2 per cent. of acid reckoned as tartaric acid. It contains a trace of alcohol and is preserved with a small quantity of sulphurous acid which, so long as it is not present in an excessive quantity, is unobjectionable. The flavour is good and the juice acts as a mild laxative. Diluted with effervescing water it makes a pleasant and refreshing, slightly acid, drink.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 7th, 1828.

MEDICAL ASSISTANTS.

To the Editor of THE LANCET.

SIR,—As a general practitioner, sincerely desirous of raising the condition of assistants, I was much chagrined, on calling some little time past at the Lancet Office, to find so very few signatures attached to the list, you were so kind as to allow to be left there; and most unwillingly was I compelled to think, that if assistants were so negligent of their own interests, as not to wish to make an effort to emancipate themselves from their present miserable and degraded situation, it was quite impossible for other persons, however ardent they might be in their desires, to render them any assistance. Under this impression, I gave up the idea of stirring further in the affair. A casual interview yesterday with the writer of one of the former letters on the subject, which appeared in your truly valuable publication, leads me to imagine I was wrong in the opinion I then formed. I find from him, that many more names would have been signed, had not an idea prevailed, that the original mover had abandoned the cause; and it seems many imagined the list at Callow and Wilson's, and that at your office, were left by different persons. Feeling convinced, Sir, there are a number of spirited and well-informed young men, assistants, who would gladly join in any scheme by which their respectability, and, consequently, their comfort, might be increased, (most assuredly it will not be so before needed,) I now take the liberty of throwing myself on your generosity for an insertion of this letter, and that by some remarks of your own, you will call the attention of those interested, to the subject of its contents. I would suggest, that those who have already signed the list, should meet together, for which purpose I shall be most happy to offer the use of my house, (enclosed you have my card,) we could then consider the propriety of a public meeting. Let there be but a beginning made, and I have no doubt, with your able assistance, we shall find plenty of supporters; and that before five years, an assistant, instead of being as he now is, little better paid than a livery servant, and sometimes less thought of, will hold that rank in society his education entitles him to, and his services so richly deserve. You have already, Sir, done much good for the profession; and I rest confident, that when so large a field is opened for your benevolent exertions, as that afforded by the unfortunate condition of assistants generally, you will not cease to give your powerful aid, until you have attained the much-wished for, and long necessary reform. You are at liberty to give my address to any gentleman desiring to aid the cause.*

I have the honour to be, Sir,
Your obedient Servant,

Upper Seymour Street, Portman Square, May 18. L.

* The address of this gentleman is left at our Office.

New Inventions.

A NEW CHINA SICK FEEDER.

THE illustration represents a new form of china sick feeder which Messrs. Adderleys, Limited, of Longton, Staffordshire, have made at my suggestion. It possesses the following advantages over the glass feeder. 1. It presents a superior appearance. 2. It is more easily cleaned and looks cleaner when it is washed. This is all the more apparent after the use of some such liquid as milk. 3. Its surface is nicer to the touch and it is not scratched like the surface of a glass feeder which has been in use for a few weeks. 4. It will stand high temperatures better than a glass feeder. I also believe that it is cheaper than the glass feeder.

The shape of this feeder enables it to be more easily washed and kept clean than the old-fashioned china feeder with a spout. Its use is, moreover, free from the great difficulty which some persons have in drinking out of a spout. I am making no profit, either direct or indirect, out of my suggestion. The feeder may, however, be of some interest to my medical friends.

Newcastle-under-Lyme. FRANK SHUFFLEBOTHAM.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

MONDAY, MAY 28TH.

THE General Medical Council resumed on Monday, Dr. DONALD MACALISTER, the President, being in the chair.

British Medical Association and Direct Representation.

Mr. BROWN called attention to the scheme adopted by the British Medical Association in regard to the nomination and election of Direct Representatives to the Council and asked the President whether the pledge exacted by the Association was not calculated to encroach on the privileges of the Council.

The PRESIDENT, in reply, said: The general question whether a certain action is calculated to encroach on the privileges of the Council is one which the President cannot determine: it is a question for the Council itself. Having regard, however, to the observations of the Lords Justices in Allinson's appeal I think it proper to state that, in my opinion, a member of the Council pledged to follow the directions of an association, or belonging to an association giving such directions, would be precluded from taking any part in judicial inquiries before the Council in which, as informants or otherwise, the association was concerned.

Pupilage under Practitioners.

Mr. BROWN moved that the following notice of motion be referred to the Education Committee for consideration and report to the Council:—

That a period of pupilage of not less than 12 months with a registered medical practitioner officially recognised for the purpose by one of the licensing bodies should be regarded as equivalent to a period of six months of the ordinary medical curriculum.

He said he found that the motion carried by the Council in 1890 in order to meet the demand that pupilage or tuition with a medical practitioner should be recognised as part of the candidate's general education had proved a dead letter because no candidate had brought forward a certificate to any of the corporations and asked to have six months' training or work with a practitioner recognised as part of the curriculum. His own impression was that the best time for a student to have this training was before he entered hospital practice.

Mr. JACKSON seconded the motion.

Mr. MORRIS said that if Mr. Brown proposed that six months of the last year of a five years' curriculum should be spent in this way he might have had some supporters but the idea of a five years' curriculum as things were at present was a pure fiction. There had never been a five years' curriculum of strictly medical studies. In his opinion it had never been more than four years and to take six months off would be a deplorable step.

Sir THOMAS MYLES said that as far as Ireland was concerned there was certainly a five years' curriculum. No one took out the preliminary science studies other than in a medical school. He would oppose the motion because it was too much to assume that a medical practitioner in the hurry and rush of his daily work was able to impart tuition to students.

Dr. LINDSAY STEVEN asked whether any registered medical practitioner was recognised for this purpose by any one of the licensing bodies. He had never heard of such a thing.

Mr. BROWN said he was sure that there were many practitioners who would, and could, give valuable training to students by initiating them into the arts of prescribing and dispensing medicines.

The motion was rejected by a large majority.

Petition of the British Optical Association.

The PRESIDENT asked the leave of the Council to have the memorandum transmitted to the Lord President of the Privy Council with regard to the petition of the British Optical Association entered on the minutes.

This was agreed to.

The memorandum set out the history of ophthalmological science in this country, thereby disposing of the pretention of the British Optical Association that "the trade or profession of a practical optician *includes and always has included* the practice of the science of measuring the refraction of the eye and the adaptation of lenses for aiding defective sight which forms a most important part of the practical optician's duty and requires special knowledge and training for rendering proficient those who profess to adapt lenses for aiding defective sight." The whole of this statement, and especially the words in italics, are shown by the memorandum to be devoid of any real foundation; the statement and the claim which it implies are alike contradicted by the facts set out.

Having traced our scientific knowledge of refraction and of the treatment of its errors to the labours and discoveries of Young, Whewell, Airy, and especially Helmholtz and Donders, the memorandum points out that the admission by the petitioners in Clause 7 that "where defective vision is due to other than optical conditions it should be treated by a duly qualified medical practitioner" is fatal to the rest of their contention; not only because, as a matter of fact, optical defects and diseased conditions constantly overlap and complicate each other but also because the former cannot be certainly recognised or the latter certainly excluded by any but a medical practitioner.

From this point the memorandum runs as follows:—

In order that certain errors of refraction may be accurately measured it is often necessary to produce temporary paralysis of the accommodation muscles by the careful use of atropine or some other poisonous drug. To intrust the employment of these poisons to opticians would be to endanger the public safety. Yet without their use it is impossible to fulfil "the function of dealing with the improvement of human vision so far as optical aids are necessary and applicable," which function the petitioners propose to assume.

On the other hand, defects of vision that can to some extent be counteracted by the use of spectacles are often associated with diseases of the eye which cannot be detected or treated by the means at the optician's disposal. Weakness or error of sight is, moreover, in many cases but the initial symptom of grave disease affecting the nervous system or the body in general. Failure on the part of the optician to recognise such local or general disease would inevitably result from his lack of medical and surgical knowledge; and the consequences of his failure might be disastrous to those who, in ignorance of his limitations, had placed their trust in his powers of "sight-testing."

The foregoing considerations apply equally to the Bill and the petition, both of which are demands for exclusive privileges to be conferred upon persons who have no sort of claim to them, and who would be likely to use them to the prejudice of the public. A desire on the part of makers and sellers of spectacles to know all that can be learnt about the applications of their merchandise is laudable, and for this purpose the writings of medical men are freely open to them. But privileges which would hinder the village watchmaker from keeping a selection of "spectacles to suit all sights," or even from styling himself "watchmaker and optician," would be inconvenient to large sections of the population. The knowledge necessary to distinguish purely "optical" defects of the eye, if such there be, from conditions bordering upon, or passing into, disease can only be attained by a complete medical education; and the grant of "sight-testing" diplomas to persons who are not medically educated and who, as we already see abundantly, would be likely to seek to use them as instruments of trade advertisements could hardly fail to lead to disastrous results. The persons so furnished with diplomas would in many cases, to use the words of Donders, be "rendered rash by ignorance" and would be certain to transgress the wholly unpractical limitations laid down in the petition and in the Bill; while the public would be deceived by the grant of legal privileges and would be likely to believe that those possessing them were really conversant with ophthalmology.

It remains to mention that an argument in support of the Bill has been founded upon the supposed analogy furnished by the Pharmacy Acts; but this argument will not bear investigation. The pharmacist deals with a great range and variety of raw materials and of preparations, many of which in unskilful hands would be extremely dangerous to life. The "optician" deals only with lenses, few in number, simple in construction, and harmless in themselves. His shop contains no sources of peril against which the public may rightly ask to be protected. Moreover, in regard to bodily infirmities the pharmacist's duty is limited to the supply of preparations asked for by customers, or to the accurate dispensing of the prescriptions of qualified medical practitioners. He exceeds his duty when he himself undertakes to diagnose and to prescribe for even the simpler departures from health. The optician has at present the analogous functions of making and selling the mechanical and optical appliances which the purchaser may seek or the ophthalmic surgeon may prescribe. To confer on him the privilege of himself prescribing for and treating patients suffering from disorders of the eye would be to sanction the creation of an inferior and purely commercial order of medical practitioners, exempted from the training and the disciplinary restraints which the Medical Acts impose.

Society of Apothecaries.

On the motion of Sir HUGH BEEVOR, seconded by Sir JOHN WILLIAMS, the following communication, referred to the Council by the Executive Committee in regard to a draft Bill promoted by the Society of Apothecaries of London, was received and entered on the minutes:—

17, Wimpole-street, Cavendish-square, W., March 30th, 1906.

DEAR SIR,—The Society of Apothecaries desire to bring the draft of a Bill for amending the title of L.S.A. to the notice of the Medical Council and for the expression of their opinion should such be their desire.

I am, yours truly,

To the Registrar. HUGH R. BEEVOR.

"An Act to vary the diploma or title of Licentiates of the Society of Apothecaries of London.

Whereas since the 30th day of June, 1887, every person applying to the Society of Apothecaries of London for its licence to practise as an apothecary has been required to pass a qualifying examination in medicine, surgery, and midwifery duly held by the said Society of Apothecaries with the assistance of examiners appointed by the General Council of Medical Education and Registration of the United Kingdom (hereinafter referred to as the General Council) in accordance with the provisions of the Medical Act, 1886, which came into operation on the date aforesaid.

And whereas the diploma or title of 'Licentiate of the Society of Apothecaries, London,' has heretofore been inserted in the Register kept under the Medical Acts (hereinafter referred to as the Medical Register) as the qualification of a registered medical practitioner holding the said licence of the said Society of Apothecaries.

And whereas it is desirable that the terms of the diploma or title granted by the said Society of Apothecaries to its licentiates who have passed such qualifying examination as aforesaid shall clearly indicate that it is a qualification in both medicine and surgery.

Be it therefore enacted, &c.:—

This Act may be cited as the 'Apothecaries Act, 1906.'

It shall be lawful for the said Society of Apothecaries to grant to every person who has since the 30th day of June, 1887, passed or shall hereafter pass a qualifying examination in medicine, surgery, and midwifery duly held by the said Society of Apothecaries in combination with another medical corporation or a university or with the assistance of examiners appointed by the General Council in accordance with the requirements of the Medical Act, 1886, the diploma or title of 'Licentiate in Medicine and Surgery of the Society of Apothecaries, London.'

The said diploma or title of 'Licentiate in Medicine and Surgery of the Society of Apothecaries, London,' shall be deemed to be added to the qualifications in Schedule (A) to the Medical Act, 1858, and every person possessed of such diploma or title shall be entitled to have the same entered in the Medical Register as his or her qualification or additional qualification for registration under the Medical Acts."

Sir HUGH BEEVOR moved:

That this Council has no objection to the statutory definition (i.e., in an Act of Parliament) of the registrable title L.S.A., whereby "Surgery" as well as "Medicine" shall be connoted.

He said that by the Bill the Society of Apothecaries had drafted it was intended clearly to indicate that the title was a title of qualification in medicine and surgery. It was a matter of propriety as well as courtesy that the Society should bring this Bill before the Council and his motion was one that it was quite proper and courteous for the Council to consider, having regard to the petition of a large number of petitioners in the previous session.

Sir THOMAS MYLES seconded the motion.

Dr. ADYE-CURRAN suggested that the Apothecaries' Hall of Ireland should be included in the scope of the Bill.

Sir CHRISTOPHER NIXON agreed with Dr. Adye-Curran.

The PRESIDENT said the Society had taken the only step which was open to it and which had been suggested by the Executive Committee—namely, a proposal to alter the law. The Council had no objection to the word "surgery" appearing in the title, as, in fact, surgery appeared in the actual qualification.

Sir JOHN W. MOORE and Dr. NORMAN MOORE thought that medicine, surgery, and midwifery might all be mentioned.

The motion was agreed to.

Visitation and Inspection of Qualifying Examinations.

The Council took up the adjourned consideration of the proposed Standing Orders relating to the visitation and inspection of qualifying examinations.

The Standing Orders as revised by the Executive Committee and submitted to the Council on Dec. 1st, 1905, were as follows[1]:—

XXIII.—VISITATION AND INSPECTION OF QUALIFYING EXAMINATIONS.

(1) The qualifying examinations of the several licensing bodies in the three divisions of the kingdom shall be visited and inspected on behalf of the Council from time to time as the Council shall direct.

(2) The visitation shall be conducted by one or more members of the Council deputed as visitors for that purpose; the inspections by one or more inspectors appointed by the Council, but not members thereof.

(3) The cycle of visitations and inspections shall ordinarily extend over three years. Within each of the three years the Universities of one division of the kingdom and the licensing corporations of another division of the kingdom shall be visited and inspected.

(4) The visitor or visitors shall be appointed by the Council at the May session in each year for the ensuing calendar year, and visitors belonging to one division of the kingdom shall be deputed to visit examinations held in another division. Should a visitor so appointed be unable to act, or should no appointment have been made in time for a particular examination, the Executive Committee, or in case of emergency the President, shall appoint a visitor for that turn. All appointments so made shall be reported to the Council at the session next following.

(5) One or more inspectors shall be appointed for the cycle of inspections and for all three divisions of the kingdom. An inspector shall not during his tenure of office act as examiner in any qualifying examination.

(6) A visitor shall receive no remuneration but shall be paid his travelling and hotel expenses.

(7) The remuneration of an inspector shall be at the rate of £200 per annum in addition to his travelling and hotel expenses.

(8) A list of the examinations to be visited and inspected in the ensuing year, with their respective dates, shall be drawn up and circulated among members of the Council before or during the May session, with a request that members will intimate to the President which examination or examinations they are willing to visit.

(9) The President shall give to each visitor and inspector a formal commission in writing under the seal of the Council.

(10) It shall be the duty of inspectors to report to the Council their opinion as to the sufficiency or insufficiency of each examination attended by them. Their reports shall set forth in order all necessary particulars as to the questions proposed in the written, oral, and practical parts of the examination, the cases and the appliances provided for clinical examinations, the arrangements made for invigilation, the method and scale of marking, the standard of knowledge shown by successful candidates, and generally all such details as may be required for adjudicating on the scope and character of the examination.

It shall be the duty of visitors to report, separately from the inspectors, on each examination visited by them, and they shall include in their report such particulars and observations thereon as they deem important for the information of the Council.

(11) Visitors and inspectors shall include in their reports, in the form of a brief diary, a statement of the days and hours at which they were respectively present during the course of the examination, and of the parts or divisions of the examination in progress on each day.

(12) Visitors and inspectors shall be made acquainted with such previous reports on the examinations attended as the Executive Committee or the President may direct, together with the remarks and observations of the licensing bodies and the reports of the Examination Committee thereupon. They shall also be provided with copies of the recommendations of the Council in regard to professional examination, and shall include in their reports a statement of the extent to which these recommendations have been carried out in the case of each examination attended.

(13) The reports of visitors and inspectors when prepared shall be forwarded to the President, who shall cause them to be printed. The final proof copies of the reports, as corrected, shall be signed in writing by the visitors or inspectors, as the case may be, and shall be preserved by the General Registrar as the authoritative copies.

(14) Previous to the meeting of the Council at which the reports of visitors or inspectors are to be considered confidential copies, not exceeding 50 in number, of each report shall be forwarded for consideration to the licensing body to which such report refers, with a request that the body will make such remarks and observations thereon as may be thought necessary and will forward the same with as little delay as possible to the General Registrar.

(15) A confidential copy of each report of the visitors or inspectors, together with the remarks and observations made thereon by the licensing body concerned, shall be supplied, when ready, to each member of the Council.

(16) The Examination Committee shall consider and report to the Council on each report of the visitors or inspectors and shall also at the end of the cycle of visitations and inspections present to the Council a general report on the results and conclusions arrived at.

Dr. MCVAIL had given notice of the following amendment:—

That the Standing Orders as submitted by the Executive Committee be recast so as to embody the following provisions: (1) that the existing system of cycles of inspection and visitation at intervals be discontinued; (2) that inspection and visitation be dealt with under distinct and separate rules; (3) that standing inspectors be appointed who shall conduct inspections where and when required by the Council on the advice of the Examination Committee; (4) that the reports of inspections be henceforth not published in the minutes except by express direction of the Council in any particular case; and (5) that the term "qualifying examination" include any examination held by a qualifying body in any subject or subjects of the medical curriculum.

He said that the Council must under the 1886 Act appoint inspectors. Under the 1858 Act they might appoint visitors. Under the 1886 Act the inspectors must report to the Council and the Council must return the report to the body inspected for observation and then it must be sent to the Privy Council. Under the 1858 Act the visitors might or might not report to the Council. If that report came the Council might adopt, decline, mutilate, or alter it, and send it to the Privy Council in whole or in part. That was the first point with regard to the separation of visitation and inspection. They were not prohibited from sending a visitor, who might be present at an inspection at the same time as the inspector, but that visitor must have no communication with the inspector. That was the first point in which the Standing Orders as he suggested them differed from the Standing Orders hitherto in force. Hitherto the inspections had been intermittent which was not contemplated by the Act. Practical continuity of the work of inspection was implied, not necessarily of every examination or even in any one year, but it was implied that the Council should always have inspectors more or less at work as the Council might require. Hitherto they had appointed an inspector once in ten years for a period of about three years, and they had informed everybody of the time when the inspector would be at the examination. The inspection when completed was over for ten years and the particular body knew that it would not be looked at again for ten years. He held that that was not carrying out the intention of the Act which undoubtedly meant that

[1] These orders were originally published in THE LANCET of Dec. 9th, 1905, p. 1698

the examinations were to be inspected when the Council might think fit. The Council, however, was not entitled to think fit that a single inspection of every examination once in ten years was sufficient. The Council ought to make it the duty of the Examination Committee to consider at all times the conditions of the examinations of the different bodies and to advise the Council when inspection should take place. Undoubtedly some bodies would be inspected oftener than others. He did not think the Council had ever given any attention to Subsection 4 of Section 3 of the Act under which an inspector was to receive such remuneration as the General Medical Council might sanction or the Privy Council might determine. That did not mean that the Council was to overpay its inspectors but that it was not to underpay them. Therefore he thought they should have standing inspectors paid according to a scale for the work done by them. The Council had hitherto published the reports, but he held that they had no copyright in them and had no legal right to publish and to sell them. Their right was exhausted when they had received the report and sent it to the Privy Council. Apart from the legal question, he was sure those reports ought not to be published but should be confidential. An inspector whose report was confidential would in all probability deal with it differently from what he would do if he knew it would be published. As to what constituted a qualifying examination, in his view it had practically been determined by the Council in 1890 that it should be an examination in such subjects as guaranteed the possession of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery. The words of the Act were that "a qualifying examination shall be an examination in medicine, surgery, or midwifery, held for the purpose of granting a diploma or diplomas," &c. The Council had hitherto dealt with the final examination as if it alone were the qualifying examination. The medicine, surgery, and midwifery of the Act included whatever subjects the Council regarded as essential to professional study and examination, however they might be divided. The Council must inspect all the subjects which it said belonged to the qualifying examination and hitherto it had not done so.

The PRESIDENT said that if any of the proposals of Dr. McVail were carried they would be instructions to the Executive Committee and he thought it would be proper to move them one by one. Those that were agreed to would be carried out in detail by the Executive Committee. He might say that the Council had legal opinions on the interpretation of the Act which would be found on pages 238 and 246 of last year's volume of minutes.

On the first amendment it was agreed to leave out the words "and visitation" and the amendment was carried by 12 votes to 9.

The second amendment having been agreed to,

Dr. NORMAN MOORE said with regard to the third proposal that it would be a mistake to have permanent inspectors retained.

Dr. MCVAIL said he did not mean that inspectors should be appointed permanently but that they should always have inspectors, although in some years they might not have any work to do.

Mr. TOMES thought the phrase "on the advice of the Examination Committee" ought to be omitted.

After further discussion the amendment was agreed to in the following form:

That inspectors be appointed for definite periods who shall conduct inspections of the qualifying examinations where and when required by the Council.

It was resolved, on the motion of Dr. MCVAIL, seconded by Sir JOHN W. MOORE, to add another amendment, viz.:

It shall be the duty of the Examination Committee to advise the Council as to the time and place of inspections.

On the fourth amendment,

Dr. NORMAN MOORE said this amendment would be a grave mistake. The inspector who would make a different report if he thought it was to be kept secret ought never to be appointed. The more publicity they gave to their proceedings in connexion with education the more useful they were likely to be to the public.

Sir CHRISTOPHER NIXON said they were bound to lay those views on the examinations before the profession at large.

Dr. BRUCE remarked that there was another objection. He should not like to have to decide what report should be published and what report should remain confidential.

The PRESIDENT wished to point out that the Council never obtained any copyright in those matters and the question of copyright did not arise.

Dr. MCVAIL withdrew his amendment.

On the fifth proposal put forward by Dr. MCVAIL,

The PRESIDENT said they must not by a definition of their own go behind the definition of the Act of Parliament. It was perfectly possible to visit and to inspect other examinations, but nothing but confusion would arise if they took a technical term and used it in a non-technical sense.

In the course of the discussion,

Mr. THOMSON pointed out that it was proposed to subject to something which was equivalent to an official inspection, which implied control, not only the professional examination but the cultural side of education. Some of the educational bodies might resent any such idea.

Dr. FINLAY said that if they were to appoint inspectors in all those subjects they must remember the financial aspect of the question. Their balance of £900 would soon disappear.

The PRESIDENT said that every question of a legal kind raised by Dr. McVail had been already answered by the opinion given by Mr. Muir Mackenzie in 1887 and acted upon continuously by the Council ever since.

Mr. TOMES, after further discussion, submitted that the amendment was of no use, seeing that they had resolved that the Examination Committee was to give the Council advice as to when and where inspections should take place.

Dr. MCVAIL agreed that the best plan would be to withdraw the amendment, which was accordingly done.

Dr. FINLAY moved an amendment on Standing Order 5, with the object of securing the appointment of three inspectors instead of one for medicine, surgery, and midwifery respectively. He thought there should be a great advantage in having expert opinions in each of those three great branches of examination.

The amendment was agreed to.

It was resolved to refer the question of remuneration of the inspectors to the Executive Committee for consideration and report.

On the motion of Dr. NORMAN MOORE, seconded by Dr. FINLAY, it was remitted to the Executive Committee to re-draft the Standing Orders in accordance with the resolutions come to.

Voting by Ballot for Direct Representatives.

Sir VICTOR HORSLEY moved:

That the Executive Committee be instructed to approach the Privy Council and to secure such alteration in the regulations 8 and 10 of the Schedule of Instructions to voters under section 8 of the Medical Act, 1886, as will provide for the adoption of the principles of voting by ballot in lieu of the existing open system of election of direct representatives.

He declared that on principle secret voting was greatly to be commended and he could see no objection to adopting it.

Dr. BRUCE, in seconding the motion, said he felt that it was right that protection should be given to the voter as was done in Parliamentary elections.

The PRESIDENT said he thought it would require a new Act of Parliament to abolish the voting paper.

Dr. KIDD was of opinion that only an alteration of the Privy Council's regulations would be required. As the voting was at present conducted there was nothing to prevent personation, nor was there any attempt to define residence so as to prevent, say, an Irish practitioner who had practised in England for a long time voting in an Irish election.

Sir THOMAS MYLES said he had taken part in the last election in Ireland. He thought the personal feeling would occasionally menace the freedom of the voter.

After further discussion the motion was carried by a majority.

The PRESIDENT said they ought to be clear about the matter. He understood that the Executive Committee was to consider the matter first in order to see whether something definite could be placed before the Privy Council.

Sir VICTOR HORSLEY said that if the Executive Committee found the proposal absolutely impracticable they would no doubt report to the next meeting of the Council.

Students' Practical Midwifery Committee.

Sir JOHN WILLIAMS moved that the report of the Students' Practical Midwifery Committee be received and entered on the minutes.

The committee reports under a resolution passed by the Council on May 27th, 1905, which is as follows:—

"That a committee of the Council be appointed to inquire into the

operation of the rules regarding the midwifery practice required of candidates for medical qualifications."

This covers a wider field than any reference previously made to any committee appointed to inquire into the teaching of practical midwifery. The reference to the committee which reported to the Council on Nov. 29th, 1895, had special regard to attendance by the student on cases of labour under the supervision of a registered medical practitioner and was limited to that one point. The reference to the present committee covers the whole teaching of practical midwifery.

With the object of obtaining information upon the subject the following letter, signed by the President, together with the questions appended thereto, was forwarded to the licensing bodies which include teaching institutions and to other teaching institutions which are recognised by the licensing bodies for subjects other than those of the first year's course:—

"General Council of Medical Education and Registration of the United Kingdom, 299, Oxford-street, London, W.,
August 2nd, 1905.

"SIR,—At the last session of this Council a committee was appointed to inquire into the operation of the rules regarding the midwifery practice required of candidates for medical qualifications and in connexion with this inquiry I have to ask in the name of the Council that you will be good enough to assist the committee, which is collecting information as to the present position of midwifery teaching, by answering the following questions so far as they relate to your school.

Yours faithfully,
(Signed) DONALD MACALISTER, President."

QUESTIONS.

1. At what period of the curriculum is the student allowed to attend his cases of labour?
2. What parts of his general medical education must he have completed?
3. What special preparation is given him previous to his attendance on his cases?
4. Are students required to attend clinical instruction in a lying-in hospital or obstetric wards? If so, how long is the student required to attend?
5. What is the midwifery teaching staff at your school and what amount of instruction do the members of it severally give?
6. What are the regulations of your school respecting attendance on cases of labour? Must the student attend them in your maternity department or may he attend them elsewhere?
7. How many cases of labour must the student have attended under adequate supervision before he is allowed to attend by himself alone?
8. How many cases is the student required to conduct personally? At how many conducted by others must he be present?
9. What is the average number of cases attended by each student in your school?
10. What proportion of your students "attend for three months the indoor practice of a lying-in hospital" as an alternative to not less than 20 cases of labour?
11. Who signs the student's certificate of attendance on cases of labour, and on what evidence?
12. What are your arrangements for the student attending cases of labour:—(1) Where does he reside during the time of his attendance on cases? (2) Does he attend the cases alone or in the presence of and under the personal supervision of (*a*) the obstetric physician; (*b*) the obstetric resident; and (*c*) a midwife? (3) What instruction is given (*a*) during the progress of the labour; and (*b*) during the puerperal period, and by whom is it given?
13. What are your rules respecting the student's action in abnormal cases?
14. Under what circumstances must the student send for help and to whom?

This letter was sent to 38 teaching institutions. Answers have been received from 37.

SUMMARY OF THE ANSWERS.

Three of the institutions have no school of practical midwifery, and their students obtain their practice elsewhere.

Several of the other schools have no maternity, and their students take out their midwifery practice in lying-in hospitals or elsewhere.

From 32 institutions more or less full answers have been received. These contain a mass of information which may be summarised as follows:—

1. The period of the curriculum at which the student is allowed to attend cases of labour varies in different schools, for he is allowed to attend in his third year in 16; he is allowed to attend in his fourth year in 15; at any time, but usually at the end of the third year, in one.

2. He will already have completed anatomy and physiology in eight; anatomy and physiology and lectures on materia medica in one; anatomy and physiology and lectures on midwifery in 14; anatomy and physiology, lectures on medicine, surgery, midwifery, and part of hospital work in two; anatomy and physiology, pathology, surgery, and first course of medicine in one; anatomy and physiology, clerking, and dressing in five; anatomy and physiology, first year's hospital work, and lectures on medicine in one.

3. With regard to the special preparation of the student previous to his attendance on cases there are lectures on midwifery in six; lectures on midwifery and tutorial classes in 20. He is required to attend one to six cases under adequate supervision (which appears to mean in the presence of the obstetric resident or other responsible officer) in 21; to pass a preliminary examination in midwifery in three. The six institutions, which provide systematic lectures on midwifery only, possess no maternities and their students take their midwifery practice in lying-in hospitals or maternities in the neighbourhood.

4. It is obligatory on the student to attend the practice of a lying-in hospital for three or six months in six; it is not obligatory in 26. In one of the 26, however, most of the students attend a lying-in hospital.

5. It is difficult to summarise the information furnished respecting the staffs of the various schools and the duties of their several members. In Scotland none of the teaching institutions possess hospitals or maternities and the students obtain their clinical teaching and practical experience in the hospitals of the town in which the school is situated. In towns in which there are several medical schools, the infirmaries, dispensaries, and lying-in hospitals appear to be used in common by the students of all the schools. A similar practice seems to prevail in Ireland and in the provincial towns of England, while in London each school has its own outdoor maternity. There is one professor of, or lecturer on, midwifery in every school, with the exception of that of the Irish Conjoint Board. There is one professor, with or without assistants, in nine. There are two physicians (one being lecturer or professor) in 16. There are three physicians (one being lecturer or professor) in one. There are four physicians (one being lecturer or professor) in two. There are eight physicians (one being lecturer or professor) in two. There are 12 physicians (one being lecturer or professor) in one. Among the four physicians at one school, the eight physicians at another, and the 12 at a third, are included the medical officers of the lying-in hospital. In five schools the professor has one or two assistants. Tutorial classes, conducted by one of the physicians, a professor's assistant, tutor, or demonstrator, are held in 21. In ten these classes are conducted by one of the physicians; in three by the assistant to the professor; and in five by the tutor, demonstrator, or obstetric resident. The main work of the obstetric resident, however, is to accompany the student to his early cases, to attend difficult or abnormal cases, and generally to superintend the work of the maternity. The length of the period during which the classes are held varies from three months to one academic year, and their meetings from one to three a week. Clinical lectures are also given, but the replies do not enable the committee to state in every case whether they are on subjects in midwifery or on subjects in gynæcology.

6. Six schools require their students to attend the practice of a lying-in hospital for a period of three or six months. Eight require them to attend their cases in the maternity of the school, while 19 permit them to take their cases elsewhere.

7. With regard to the number of cases the student is required to attend under adequate supervision, before he is allowed to attend cases alone, it appears that in two the number of cases required is six; in five the number of cases required is five; in five the number of cases required is three; in one the number of cases required is two; in one the number of cases required is a few; in seven the number of cases required is one. In one school he may attend alone from the first and in two schools there is no rule.

8. The student is required to conduct personally 20 cases at least in 19. Three of these require in addition five to ten cases conducted under supervision. Ten conducted personally and ten under supervision in one; 12 conducted personally in three; nine conducted personally and three by house surgeon in one; nine conducted personally in one; six at least conducted personally, not less than 12 in all, in one; no fixed number in two.

9. The average number of cases attended by each student may be stated thus: Between 20 and 40 cases, in 16 schools; between 20 and 60 cases, in one school; between 40 and 60 cases, in four schools; between 20 and 200 cases, in one school; between 12 and 16 cases, in seven schools.

10. In 11 schools none of the students attend for three months the indoor practice of a lying-in hospital "as an alternative to 20 cases of labour"; and of those in ten others practically none do so. About 50 per cent. of the students in one school take the alternative; about 6 or 7 per cent. of those in another attend the indoor practice of a lying-in hospital for three weeks; and about 15 per cent. of those in a third attend for one month—most of them in addition to attendance on 20 cases. All or almost all the students of six schools take three months in a lying-in hospital.

11. The certificate of attendance on cases is signed by an officer of the school or hospital generally appointed or authorised to do so. He may be the obstetric physician, house surgeon, resident obstetric officer, midwife, secretary, dean of faculty, warden, demonstrator of midwifery, medical superintendent, or the whole visiting staff. The certificate is signed on the evidence of the hospital register, record, medical staff, personal voucher of clinical clerk, obstetric resident, signed letters of the maternity officer in personal charge of students, student's report on cases which he has "seen," or examinations after six months' work in hospital.

12. During the period of his attendance on cases of labour: (*a*) the student resides in the hospital in 12 institutions; in quarters provided in six institutions; in lodgings near or within a radius of a mile from the hospital in 11 institutions. (*b*) In 12 institutions the student attends his cases under supervision—that of the obstetric physician in two; that of the obstetric resident in four; that of the obstetric resident, qualified midwife, nurse, or midwife-nurse in three. In three he attends or may attend all his cases alone. In lying-in hospitals the student is always under the supervision of the matron, resident medical officer, or physician, and is placed in favourable circumstances to receive bedside instruction in the progress of labour and of the puerperium. The replies received respecting the instruction given in out-door maternities during labour and the puerperium are sufficient to indicate that it is at the best of a meagre character.

13 and 14. In all out-door maternities the rule is, broadly, to send for the obstetric resident in every case which presents any abnormality. In several answers particular abnormal conditions are mentioned, in the presence of which the student is required to summon the obstetric physician or resident, such as when the student is in doubt as to the nature of the presentation or is unable to make it out, abnormal presentation, protracted labour, retention of the placenta, accident, such as hæmorrhage before or after delivery, convulsions, exhaustion; when during the puerperal period the mother or child is not doing well; or when the pulse-beats are 100 per minute or the temperature 101° F.

Such is a summary of the answers received in reply to the questions sent to the schools.

OBSERVATIONS BY THE COMMITTEE

On reviewing the facts your committee find that—

(1) In eight schools the student is allowed to attend cases of labour after he has passed the examination in anatomy and physiology.

(2) In one after having in addition attended lectures on materia medica.

(3) In 14 after having attended systematic lectures on midwifery.

That is, the students of 23 schools are allowed to attend cases of labour before they have acquired any knowledge whatever of medicine and surgery. In 19 schools the student may attend his cases in the school maternity *or elsewhere*; in eight he must attend them in the

school maternity with this amount of supervision—that he is accompanied by the resident obstetric to his first case or first few cases and has directions to summon the resident when he thinks that necessary. The average number of cases attended by each student is in excess of that required by the Council in 22 schools, while it is below the Council's minimum in seven. The evidence upon which the certificate of attendance is signed would be satisfactory were it in all cases based on definite records of cases attended and not on personal belief or recollection. The nature of the supervision exercised over the student may be gathered from the fact that in 21 institutions, after he has attended from one to six cases with a medical officer, he attends the rest alone. 12 of the institutions reply that he attends under personal supervision, so that the words "personal supervision" in this connexion mean no more than that the student must send for the responsible officer when he thinks it necessary in accordance with the rules of the institution.

With regard to the instruction given during the progress of labour and the puerperium, full instruction is or may be given within the walls of a lying-in hospital; but in outdoor maternities this is not possible, inasmuch as the student attends the great majority of his cases alone. Moreover, the fact that the cases are scattered over an area whose radius is a mile or more makes it impracticable for the resident officer or physician to visit them so as to give personal instruction upon them to the student in attendance. Consequently, the instruction in this respect given is of a very meagre character.

CONCLUSIONS.

Your committee have come to the conclusion that the rule of the Council—that is, that the student should attend the indoor practice of a lying-in hospital or be present at not less than 20 labours, at least five of which shall be conducted throughout under the direct supervision of a registered practitioner—is not complied with by the majority of the schools. It seems obvious that even if the course of study recommended were in itself sufficient, since its requirements are not complied with there is no evidence to show that persons obtaining qualifications possess the required knowledge and skill for the efficient practice of midwifery. Your committee are of opinion that no student should be allowed to attend cases of labour until:—

(1) He has filled the posts of clinical clerk and surgical dresser;

(2) Has attended a course of lectures on midwifery, surgery, and medicine; and

(3) Has given undivided attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for at least one month and has therein been properly instructed in the conduct of cases of labour.

It appears to your committee that by such means alone can the normal progress of labour, the use of antiseptics in midwifery, the course of the puerperium, and the care of the mother and child, be properly and practically taught, and the safety of lying-in women and new-born infants be ensured.

RECOMMENDATIONS.

The committee accordingly recommend:—

1. That the following be substituted for the existing recommendations of the Council in regard to instruction in midwifery: "That every student should be required to have conducted not less than 20 cases of labour, subject to the following conditions: (*a*) Before the student is allowed to conduct the above-mentioned 20 cases of labour he should be required to have held the office of clinical medical clerk and of surgical dresser; to have attended a course of lectures in medicine, surgery, and midwifery; to have during one month given undivided attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital; and to have therein attended cases of labour under the direct supervision of a medical officer of the hospital. He should further be required to produce a certificate from the authorities of the hospital showing that he is competent to undertake the conduct of ordinary cases. (*b*) No certificate that the student has conducted the above-mentioned 20 cases of labour should be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital."

2. That copies of this report and the resolution of the Council thereupon be sent to all licensing bodies and medical schools in the United Kingdom.

Mr. JACKSON seconded the motion.

Sir CHRISTOPHER NIXON referred to the great value of the report. He said it contained suggestions which showed that they had not been sufficiently active in this most important matter. Thanks were due to Sir John Williams for the great care and labour which he had bestowed on this subject.

The motion was agreed to.

It was also resolved, on the motion of Sir JOHN WILLIAMS, that the report should be circulated amongst the licensing and teaching bodies of the United Kingdom for their observations. At the same time Sir John Williams gave notice that he would move the adoption of the recommendations at the next session.

Executive Committee.

The following members were declared elected to the Executive Committee: Dr. Pye-Smith, Mr. Young, Sir Hugh Beevor, Mr. Tomes, Sir John Batty Tuke, Dr. McVail, Sir Christopher Nixon, and Sir John W. Moore.

Penal Cases Committee.

The following members were elected to the Penal Cases Committee: Dr. Saundby, Mr. Tomes, Dr. Finlay, and Sir Christopher Nixon.

Report of Education Committee.

Dr. MACKAY in a few words of explanation moved that the following report of the Education Committee be received and entered on the minutes:—

On the motion of Mr. MORRIS the Council, at its meeting of Dec. 2nd, 1905, passed the following resolution:—

"That it be referred to the Education Committee to consider and report to the Council (1) as to the desirability of transferring the preliminary science subjects (biology, physics, and chemistry) from the curriculum to a stage preliminary to the commencement of medical studies; and (2) as to the advisability of requiring the five years' period of medical study, even after removing from the curriculum these preliminary science subjects."

1. The consideration of this proposal involves important questions as to the standard at present reached in the secondary schools of the country, a subject which has quite recently engaged the serious attention of the Council. The committee believe that it is imperative that the Council should satisfy itself before considering any action in the direction suggested that in kind and amount the instruction is in a real sense equivalent to that which is at present demanded in the first year of the curriculum. In the course of the year 1904 a special committee of the Council drew up new syllabuses to guide the examinations in chemistry, physics, and biology, and it is gratifying to report that these appear to have been favourably received by the various licensing bodies. It is too early, however, to speak of the effect of the new regulations and some little time must be allowed to elapse before the Council is in a position to test the progress which has been made by a renewed inspection of the first-year examinations. The committee would, therefore, recommend that it is not desirable at present to exclude chemistry, physics, and biology from the professional curriculum.

2. With regard to the second proposal, the committee recommend that its further consideration be postponed until the report of the Examination Committee on the recent cycle of inspections has been fully discussed by the Council.

Dr. NORMAN MOORE seconded the motion which was agreed to.

Public Health Committee.

Dr. BRUCE stated that as no business had come before the Public Health Committee it had no report to make to the Council.

Report of the Finance Committee.

On the motion of Dr. PYE-SMITH, seconded by Mr. TOMES, the following report of the Finance Committee was adopted:—

The Finance Committee have to report that the income of the General and Branch Councils for the year ending Dec. 31st, 1905, was £9494 0*s.* 9*d.*; the expenditure for the same period was £7586 2*s.* 1*d.*; consequently there is a surplus on the year's working of £907 18*s.* 8*d.* It is with great satisfaction that the committee record a surplus, the first there has been since 1895. The receipts by the branches from fees increased by £237. This is chiefly due to the Scottish Branch which registered 58 more names than in 1904. The General Council also shows an increase of £100, due to a larger number of colonial registrations. The rent from No. 16, Hanover-square shows an increase of £158, but as the old lease expired at Midsummer last the larger sum only represents the improvement on the last six months. The charge for the insertion of additional qualifications and for restoration to the Medical Register, which was raised from 5*s.* to £1 in 1903, still continues to produce a satisfactory increase of income of about £400 a year.

The expenditure shows a reduction of £719. It will be noticed that—(*a*) the fees paid to members show the large decrease of £522, as each session was concluded in five days; (*b*) consequently the cost of printing programmes, minutes, &c., was reduced by £72, and miscellaneous printing also shows a decrease of £34; (*c*) the increase in house expenses is due to the cost of painting and cleaning the Council chamber and offices; (*d*) office improvements are responsible for an increased expenditure of £210. This is one-fifth of the total cost (about £500) of the alterations in the office, the provision of the new safe, and the materials for the new file system in connexion with the Medical Register, plus the cost of the extra clerical labour, £111; (*e*) the cycle of inspection of examinations has been completed and there is a large reduction of £385 under this head; (*f*) the increase of £170 in miscellaneous expenses is chiefly caused by the large fees (£150) which had to be paid to the architects and surveyors in connexion with the proposals made some little time ago to move the office to No. 16, Hanover-square; (*g*) the interest on the mortgage is reduced by the repayment to the English Branch Council by the General Council of £1000 in 1904, which appeared in the last balance sheet (this was the sum received from the builders next door for certain concessions); (*h*) the Irish branch was able to pay its way without the help of the General Council.

With regard to the income and expenditure of the three Branch Councils, it seems to be impossible to draw any deductions from the receipts from fees; the several Branches register sometimes more, sometimes less, names than the year before, but the general receipts are much the same, the average for the past nine years being £6732. Thanks to the diminished contribution paid to the General Council the English and Scottish Branches each show a substantial surplus and the Irish only a small deficit.

There is a satisfactory increase in the assets of the Branches and the Dental Fund.

The Pharmacopœia account shows a cash balance in hand of £933, and when the present edition is sold out at the end of about two years there should be a substantial sum to the credit of the fund.

The Irish Branch has a balance in hand, after deducting the liability, of £100. If the receipts and expenditure are about the same as last year the Branch ought to be able to pay its way, but the cost of the election of a Direct Representative will have to be met and the committee therefore recommend that a grant not exceeding £150 should be made, if it be necessary, to make up any deficiency.

The Dental Fund shows a steady increase of about £300 a year and it is in a very satisfactory position.

The Council has been fortunate this year in that an increase in

receipts coincides with a decrease in expenditure. More than two-thirds of the former is due to receipts from fees, over which the Council has no control, but the decrease in the latter is very largely the result of the expedition with which the Council carried out the business of the sessions. Not since 1892 have the sessions together lasted so few days as ten, and this is only the third time in 20 years that it has happened. Had the Council at either session this year prolonged its meeting until the Monday the expenses would have been increased by £230, and if both sessions had been so prolonged half the surplus would have been wiped out at once. As far as can be foreseen the expenses of the General Council this year will be much the same as last, but a proportion of the cost of enlarging the Council Chamber will have to be met and the branches will each have to provide for the cost of the election of Direct Representatives. It is therefore not very probable that there will be much, if any, surplus at the end of the year.

At the meeting of the Executive Committee in November Mr. Ernest Frere, of the firm of Messrs. Prideaux, Frere, Brown, and Hannay, was appointed auditor. It will be in the recollection of some of the members that Mr. Frere presented a valuable report on the finances of the Council in 1901. Under his direction a new system of accounting for the cash received day by day in the office has been introduced, with the result that not only are the books much easier to keep and to check, but there is a considerable economy of time in the work.

Students' Registration Committee.

On the motion of Sir HUGH BEEVOR, seconded by Sir JOHN BATTY TUKE, the report of the Students' Registration Committee was received and entered on the minutes. After stating the manner in which applications of exceptional registration as students or for the ante-dating of the commencement of professional study had been dealt with the committee informed the Council that it had resolved that the Hull Municipal Technical School (day classes) should be added to the list of recognised institutions approved by the Council.

Direct Representation on the Council.

Mr. BROWN moved that representations be made to the Privy Council that the time has arrived when the number of Direct Representatives for England, Scotland, and Ireland should be increased to the maximum number permitted by the Medical Act of 1886. He said that when direct representation was conceded it was given in the proportion of 1 in 5 to the corporate representation. The proportion was now 1 in 6. Whereas in 1835 the number of practitioners in England and Wales was 16,624, last year it had increased to 24,351. He thought these facts were a strong argument in favour of the addition of another member to the representation of England and Wales. The number of practitioners in Scotland had increased from 2299 in 1885 to 3773, and in Ireland from 2458 to 2602.

Sir VICTOR HORSLEY seconded the motion and said it was only a matter of justice.

Mr. JACKSON also spoke in support of the motion.

Dr. LITTLE was afraid that to enlarge the membership would mean an increase in expenditure and a decrease in efficiency. He claimed that the representatives sent from the universities and corporations were just as alive to the wants of the profession as the Direct Representatives.

Sir JOHN W. MOORE: Does Mr. Brown speak on behalf of the profession as to the increased number of Direct Representatives?

Mr. BROWN: Yes.

Sir JOHN W. MOORE pointed out that in 1901 57·27 per cent. of the voting papers sent out were never returned. The profession did not want more Direct Representatives than they had.

Sir JOHN BATTY TUKE said that on the assumption that the legislature when it gave direct representation intended that it should be proportionate between the licensing bodies, the Crown, and the profession he was prepared to support the motion. He was prepared to advocate an increase of direct representation but he was not prepared to advocate indirect representation. Mr. Brown had that day asked a question and stated how the British Medical Association intended to lay out a plan of campaign. They were to select a number of gentlemen from whom they were to select three candidates, each of whom would have to sign an undertaking consenting to the submission of his name to the divisions of the Association as willing to be nominated on behalf of the Association at the election, and agreeing that if elected he would endeavour in every way in his power to give effect to the wishes and opinions of the British Medical Association. He objected to this scheme as a member of the General Medical Council, as a registered practitioner, and as a member of the British Medical Association. Gentlemen so elected would be direct delegates and though he had acted on the Council for 20 years he could not recollect any member of the Council who had adopted such a position. On certain occasions members had to advocate the policy adopted by the body they represented, but no man ever came into that room bound hand and foot. It would be inimical to the freedom of discussion and independence of judgment if anyone came there pledged as a condition of nomination to obey the instructions of an external organisation. In all Cabinets there were the outer and the inner Cabinets. In all great councils there were the outer and the inner councils, and he believed that such delegates would be the voices of a comparatively small number of men and that there would remain a large minority unrepresented.

Sir VICTOR HORSLEY: May I ask whether this motion has any reference to the British Medical Association?

The PRESIDENT: Yes.

Sir JOHN BATTY TUKE, continuing, said that he objected to the disfranchisement of those practitioners who were not members of the British Medical Association and as a member of that Association he objected to this scheme because delegates so appointed would have no weight except the weight conferred on them by the Association. He asked Mr. Brown to withdraw his motion until they saw whether this plan would be brought into operation.

Dr. SAUNDBY thought that Mr. Brown had made out a case of adding to the direct representation of England and Wales but not of Scotland and Ireland. He therefore moved as an amendment "that it is expedient to confer on the registered medical practitioners residing in England and Wales the power of returning an additional member to the Council." On the whole he considered this would be a better arrangement than to increase the membership of the Council by three. With regard to Sir John Batty Tuke's remarks he was sure that the British Medical Association would never ask anyone who came to the Council board elected by its organisation to do any public or professional wrong.

Sir THOMAS MYLES, in seconding the amendment, said that Sir John Batty Tuke before he came to the Council had to face his constituents and to give expression to his views on certain principles and when he himself came there the Royal College of Surgeons in Ireland knew that he would support certain views. If he did not do so they would make short work of him.

Dr. BRUCE, in supporting the motion, expressed his belief in territorial representation. It was true that they had to contend with the apathy of medical men but the Council should recognise the difficulty of canvassing such large districts.

The amendment was rejected by 14 votes to 7. Nine members did not vote and four were absent.

Mr. BROWN replying on the discussion, said if he felt that the British Medical Association would dictate as to who should sit on the Council he would not vote in favour of his own motion. He believed it was intended that every member of the Association should exercise his free judgment and vote in such a way as would best represent them at the Council. Several of the divisions had passed resolutions that the scheme of the Association was calculated to deter worthy representatives from coming forward for election.

The motion was defeated by 15 votes against 6. Eight members did not vote and five were absent.

Dental Education and Examination Committee.

On the motion of Dr. NORMAN MOORE the present members of the Dental Education and Examination Committee were reappointed to the committee.

Students' Registration Committee.

On the motion of Sir HUGH BEEVOR the following were appointed the members of the Students' Registration Committee: Sir Hugh Beevor (chairman), the President, Dr. Norman Moore, Sir John Batty Tuke, Sir Christopher Nixon, Dr. Mackay, and Dr. Adye-Curran.

Re appointment of the General Registrar.

Mr. Allen was reappointed general registrar.

Vote of thanks to the President.

The business having been concluded,

Dr. NORMAN MOORE moved a vote of thanks to the President for his admirable services in the chair.

The PRESIDENT, in acknowledgment, said he had to thank the officials of the Council and the chairmen of the various committees who had done so much to facilitate the work of the Council. He congratulated the Council on having got through the programme in a business-like manner and left nothing over that ought not to have been postponed.

The session then came to a conclusion.

THE LANCET.

LONDON: SATURDAY, JUNE 9, 1906.

The Recent Meeting of the General Medical Council.

WE publish this week the conclusion of a full report of the proceedings which took place at the eighty-third session of the General Medical Council, and it is again our pleasant duty to congratulate the Council upon a prompt and businesslike discharge of its important duties. The session commenced on Tuesday, May 22nd, and ended on the following Monday, and during that time the whole of an extensive and varied programme was disposed of. It was known that the programme would be a heavy one, because important business had been remitted by the Council to various committees during the winter session of 1905, with results that reports of an elaborate nature were anticipated. The reports were duly presented and proved to be documents the consideration of which required close debating, but, owing to the general temper of the Council being suited to work, decisions were arrived at clearly and promptly. The most striking and important result of the aptitude for business now shown by the Council appears in the balance-sheet. It had become with us a stereotyped complaint at the end of each session that the finances of the Council were in an unsatisfactory condition. Sometimes the deficit was only small, it is true, and no one has ever been able to point to any wilful extravagance or obvious want of precaution; but there was the deficit, even if small, and there never seemed to be any promise of amendment. The only solid scheme put forward for raising the income of the Council—viz., the compulsory registration of the medical student—was viewed with considerable suspicion by certain of the medical corporations and was dropped some two years ago. And now, without any great reform, without any financial manœuvring, and without any loss in efficiency the story is of a surplus, the first surplus which the Finance Committee has been able to show for more than ten years. The President, in his opening address, attributed that surplus mainly to the decrease in expenditure brought about by the expedition with which the Council carried through the business of its two sessions in 1905, and we are sure that this is correct. Neither of these sessions lasted more than five days and the session that is now concluded only lasted six days, and in each case economy of words and well directed labour have produced wonderful results. But it must not be forgotten that this saving of official time has been obtained at the sacrifice of the private time of many of the members of the Council. Questions of importance have been referred to careful preliminary consideration by standing and special committees; digests, memoranda, and draft reports have been prepared and circulated in good time to members; and the medical profession as a whole should appreciate that this implies a great deal of personal, private, unpaid labour undertaken by men who are for the most part very busy. The President must also be congratulated in having been able to command such willing service; the readiness with which it has been given speaks volumes for his example and his tact.

Among special reports brought before the notice of the General Medical Council during the session two were of particular importance. The first was the memorandum of the Council upon the petition of the British Optical Association for the grant of a charter. As our readers know there is a Bill before Parliament which purports "to regulate the practice of sight-testing opticians as regards the testing of sight," and our opinion of this measure has been expressed quite recently.[1] The memorandum of the Council made public the grounds on which the members of that body object to the proposals of the Bill, finding them, as they have already informed the Privy Council, a menace to the public safety. The memorandum dealt in a civil but summary manner with the claim of the British Optical Association that in this country the optician had always been associated with the treatment of errors of refraction. It showed convincingly that none of our modern scientific knowledge in this direction has been due to the work of opticians, though certainly some of the famous work of DONDERS, as when he reconstructed the scale of lenses, might well have been anticipated by persons occupied in the mechanics of optical science. The memorandum pointed out, as we have done many times in our columns, the manifest perils of allowing persons, who have not been educated to recognise the symptoms or to undertake the treatment of general pathological conditions, to obtain official recognition as qualified to prescribe for such symptoms. The anomalous position was pointed out very plainly and the document must have considerable weight with the Privy Council. It will be found substantially reproduced in our columns, and in our opinion it disposes completely of the suggestion that some registration of opticians is required for the good of the public. But it places a distinct responsibility upon the Council. The Council, through the visitors and inspectors of the examinations at the various centres of medical education, must insure that every medical man shall be thoroughly and properly equipped to deal with the pathology and treatment of errors of refraction. It must be remembered that after a certain age a large proportion of the population may require ophthalmological assistance and the medical profession, while holding that no one without a medical training can offer such assistance, must be itself perfectly equipped to meet the public need. A second valuable report was that of the Students' Practical Midwifery Committee on the operation of the rules regarding the midwifery practice required from candidates for medical qualifications. The education in midwifery that is received by the medical student is in a manner comparable to that which he receives in ophthalmology, while the registration of midwives, now an accomplished fact, resembles to some extent the official recognition sought by opticians. The registration of midwives

[1] THE LANCET, May 26th, p. 1483.

has not proved to be the success that was anticipated by its more ardent supporters, but, if it had, the arguments which led to the creation of the Central Midwives Board could not be applied with logic to the cause of the opticians, although the superficial resemblance between the situations is striking. Just as a large majority of our population requires the assistance of the ophthalmologist so a large proportion requires the services of the obstetrician, and if the public is not to look outside the ranks of the properly qualified for assistance it is incumbent upon the medical profession to be thoroughly well equipped. There is no branch of the medical profession that brings the practitioner into closer relations with the public, that entails upon him more anxious and delicate care, that earns him more gratitude when his ministrations are successful than the practice of midwifery, and it shows a right appreciation of the situation when the Council sets itself to look closely into the ordained curriculum and into the way in which the regulations are obeyed by the different qualifying bodies. For better or worse our legislature decided upon the registration of midwives and obstetrical assistance of a certain skilled sort is now provided for the parturient poor outside the ranks of the medical profession. It is absolutely necessary that the General Medical Council should be able to guarantee to the public that the obstetric services rendered by the medical profession, which are now to some extent limited to the more arduous cases, shall be of a high scientific and practical standard.

On the last day of the session there was an interesting debate upon the necessity or otherwise of increasing the number of Direct Representatives of the medical profession upon the Council. Mr. GEORGE BROWN moved that representations should be made to the Privy Council that the time had arrived when the number of Direct Representatives for England, Scotland, and Ireland should be increased to the maximum number permitted by the Medical Act of 1886. To this Dr. SAUNDBY moved as an amendment that an additional Direct Representative should be elected for England and Wales. Mr. BROWN had no difficulty in showing that if five Direct Representatives constituted a fair proportion in 1886 they could do so no longer, now that the Council is enlarged, and it appears to have been the opinion of the Council that he was in this way able to justify his motion. However, both motion and amendment were lost. We thoroughly commend all attempts to obtain upon the Council the first-hand views of members of the medical profession engaged in general practice. THE LANCET was among the first to moot the suggestion that there should be upon the General Medical Council seats found for Representatives of the mass of the medical profession, and looking back on the work that has been done by the Direct Representatives we think that their place at the Council Board has been amply justified. We therefore see no point in delaying the alteration of the constitution of the Council that is provided for in the Act, even though we may not attach much importance to the argument that as the Council grows larger the number of Direct Representatives should be increased. It seems to us that the Direct Representatives can never have any voting power because of their number. Their function must always be to inform the Council upon points which an intimate knowledge of professional life has enabled them to appreciate, and so to sway the votes of the Council. We are inclined to think that the arguments of five good men are likely to be nearly as valuable as those of six good men, while a voting strength of five out of a body of 30 is for practical purposes nearly as powerful as a voting strength of six. Any reconstitution of the Council that would put the representatives of the Universities—an increasing class, it must be remembered—and of the corporations, taken together, into a minority would be so drastic that its consideration must present great difficulty. The British Medical Association is known to desire such thorough reconstitution of the Council that it is not difficult to understand the reluctance of some of the representatives of the universities and corporations towards reform. They feel that they do not know, once a beginning is made, where the changes may end. And this being so, we think that the members of the Council had grounds at the present juncture for their attitude, though we have every sympathy with the spirit that prompted Mr. BROWN'S motion.

We shall have occasion to refer again to other interesting subjects which formed the business of the last session of the General Medical Council.

The Effects of Metazoan Parasites on their Hosts.

IN an admirable paper under the above title by Mr. A. E. SHIPLEY and Mr. E. G. FEARNSIDES of Cambridge, published in the *Journal of Economic Biology*, 1906, Vol. I., Part 2, the effects produced by the parasitic metazoa upon their hosts are carefully described and the manner in which they act injuriously is considered. These parasites are regarded as affecting their hosts in four ways—viz., by the mere presence of the parasite in an organ exerting pressure and displacing tissues, by the migration of the parasite from one part of the body to another, by the loss caused through the parasite feeding on the juices of its host, and lastly by the action of certain toxins said to be given off by the body of the parasite either as excretions or otherwise. It is this last mode of parasitic action that has recently attracted the attention of parasitologists and in the paper before us the present state of our knowledge in this direction is summarised with full references to the literature of the subject. The principal evidence of the existence of such toxic substances may be considered under two heads—first, the actual separation of toxins from the body of parasites, and secondly, the changes induced in the blood of the host as a result of harbouring the parasite. The difficulties in the way of the separation of toxins is considerable and, as Mr. SHIPLEY and Mr. FEARNSIDES point out, it requires men of special training to carry out such a research. Evidence in this direction is, however, slowly accumulating, but by BLANCHARD and some other observers the matter is regarded as still *sub judice* as to whether these toxins play an important part in the symptoms produced in the hosts. Examples given in illustration are that the cysts of tænia echinococcus contain a leucomaine which if absorbed sets up urticaria, while toxins have been separated from the cysts of other cestodes. Again, CALAMIDA obtained from the adult

forms of tænia cucumerina and tænia cœnurus toxins which produced hæmolytic changes and possessed a chemiotactic attraction on the eosinophile leucocytes. The most interesting case for discussion in regard to the cestodes is in reference to dibothriocephalus latus, formerly called bothriocephalus. That a severe form of anæmia of pernicious type occurs in association with the presence of this parasite is well known, while toxins of great virulence have undoubtedly been separated from the bodies of these organisms. On the other hand, their presence is not invariably associated with this severe form of anæmia; it has, therefore, been conjectured that it is only when the cestode is ill or dead that the toxin is set free and produces its effects. In regard to parasitic trematodes or flukes very little evidence of the formation of toxins by them is forthcoming but it is far otherwise in the case of the nematodes. One of the best known examples is the ascaris megalocephala, a parasite of the horse, the emanations from which sometimes produce asthmatic and other toxic symptoms in man as described by Dr. H. CHARLTON BASTIAN.[1] Again, with regard to ankylostoma duodenale, recent research seems to point to the fact that this worm is not a blood-sucker and that the marked anæmia which it induces in its host is due to toxins possessing a hæmolytic action, these toxins probably being formed by the cephalic glands which are of unusual size in ankylostoma.

The changes in the blood of the host, notably the condition of eosinophilia, found in association with the presence of so many metazoan parasites supply, as Mr. SHIPLEY and Mr. FEARNSIDES insist, a very strong argument in favour of the theory of their toxic action and a considerable section of the paper is devoted to the consideration of these changes. The first observation of this nature was that of MÜLLER and RIEDER who in 1891 found an increase, both relative and absolute, in the eosinophile cells of two men infected with ankylostoma duodenale. Since that time this observation has been generally confirmed and a similar condition has been found to occur in association with many other parasites. It is further found to be accompanied by the presence of Charcot Leyden crystals in the fæces. The normal number of eosinophiles varies from 1 to 4 per cent. of the total leucocytes; consequently any increase beyond the latter figure may be regarded as an eosinophilia. It is of interest to consider the effects produced by various examples of the three groups of parasitic helminths separately. In the case of the cestodes, except in a few cases, such as dibothriocephalus latus and tænia echinococcus, the blood changes are comparatively slight, nevertheless, in nearly all cases there is at some time or other a condition of eosinophilia, though, as BOYCOTT and HALDANE have shown in regard to other parasites, this increase may disappear even though the worm is not removed. Dibothriocephalus latus seems to produce changes mostly in the red blood corpuscles, so that oligocythæmia and high colour index result, while nucleated red corpuscles, chiefly of megaloblastic type, and polychromatophile cells appear—in other words, a hæmolytic anæmia of pernicious type. According to SCHAUMANN eosinophilia occurs only in a small number of cases. In cases of hydatid cyst eosinophilia is the rule and a proportion of 57 per cent. of the total leucocytes has been recorded. The condition rapidly disappears after operation. In cases of cysticercus cysts eosinophilia may or may not be present. In the case of trematode parasites the only instance in which definite details are forthcoming is that of schistosomum (bilharzia) hæmatobium. DOUGLAS and HARDY[2] after a study of 50 cases found a leucocytosis in all of them, with an average of 16·48 per cent. of eosinophiles. In the case of nematodes a large number of observations are on record. With both ascaris lumbricoides and oxyuris vermicularis a condition of eosinophilia is usually associated. Likewise with trichinella (trichina) spiralis eosinophilia is the rule, while in cases of human trichiniasis EHRHARDT made the interesting observation that an accumulation of eosinophile cells was to be found around the encapsuled larvæ. In cases of filarial disease from filaria Bancrofti there is eosinophilia in recently acquired cases and this condition seems to exhibit a periodicity like that of the embryos themselves—e.g., in one case the eosinophiles varied from 3 to 15 per cent. in the 24 hours. An increase in the eosinophiles has also been found in association with filaria loa, filaria (dracunculus) medinensis, while varying results have been obtained with trichocephalus trichurus (dispar) and strongyloides intestinalis. The most interesting and important example of nematode infection is, however, that of ankylostoma duodenale which produces marked changes in all the blood constituents. BOYCOTT and HALDANE have shown that the total volume of the blood is markedly increased, while its oxygen capacity is slightly diminished. The red corpuscles are considerably reduced in numbers, the colour index is low, normoblasts are frequently present, while poikilocytosis and polychromatophilia are found in a few cases. The leucocytes in BOYCOTT and HALDANE'S cases showed an average of 13,000 per cubic millimetre, with an eosinophilia both relative and absolute. This last condition is most marked in recent cases and often in those who are not suffering from noticeable anæmia. The eosinophilia may be so great as to constitute 72 per cent. of the total leucocyte count.

From their study of these conditions Mr. SHIPLEY and Mr. FEARNSIDES conclude that these metazoan parasites "do give off toxins which profoundly affect the tissues of their host." The subject is one affording scope for more investigation and may open up fresh possibilities in regard to the treatment of these troublesome and in some cases dangerous parasites which play so important a part in the genesis of tropical diseases. Already the condition of eosinophilia has proved useful in the diagnosis of these infections and although not pathognomonic it affords valuable suggestive evidence in some cases.

[1] Philosophical Transactions, 1866, p. 583, note.

"Commercialism" in Medicine.

OUR respected Transatlantic contemporary, the *St. Louis Medical Review*, under the title of "Commercialism, Professionalism, and their Mutual Relations," has lately republished a series of articles which have appeared in its columns during the last few months; and the republication is rendered more interesting to English readers by the circumstance that the articles are pronounced by Professor

[2] THE LANCET, Oct. 10th, 1903, p. 1009

W. OSLER to be "excellent in every way," and that he has desired to be furnished with two copies of the reprint. It was the custom of RICHARD HEBER to purchase three copies of any book which he highly esteemed, "one for himself, one for his library, and one for his friends," and we presume that the order given by Professor OSLER may be regarded as indicating the next degree of appreciation. Generally speaking, and so far as principles are concerned, we are able cordially to endorse his approval; although the circumstances surrounding medicine and pharmacy in the United States differ too widely from those which obtain among ourselves to render the articles entirely applicable to British conditions. "Commercialism" is defined to be "the spirit that animates the commercial life, the ideals at which it aims, the ethical canons by which it professes to be guided." The writer frankly states that the first object of the commercial man is to enrich himself, to establish his own material prosperity; an object which, with the important qualification that it must be striven after worthily and honourably, is declared to be honest and praiseworthy. In contrast to commercialism, which is concerned primarily with self, the spirit of true professionalism should, we are told, be concerned necessarily and primarily with others and only secondarily with self. Commerce seeks to supply (or even to create) needs, for the purpose of getting the largest possible gains by supplying them; a profession seeks to supply necessary requirements and should be content with the customary return for the services which it affords. The difference between professionalism and commercialism as regards the profession of medicine is thus pointed out: "The man who enters upon a profession, and especially the profession of medicine, with commercial standards, is doing not only a wrong to the profession but a foolishness to himself; for the seeker after the commercial standard of success has open to him therein few prizes obtainable by honest and honourable means and none at all comparable in magnitude to those offered by commerce, honest as well as dishonest." The cordial admission that "commercialism" may be honest is somewhat seriously qualified by an accompanying assertion (which has been curiously illustrated by disclosures concerning American meat) that, as a matter of fact, it is saturated with corruption and that, in many of its forms, "it stops short at no kind of chicanery or deceit, provided such can be practised with impunity." If we read between the lines of the articles we may observe a very manifest fear that a profession, if it once became imbued with the commercial spirit, would be likely, before long, to descend to the level of commercial morality.

What is commonly regarded in this country as the differential phenomenon between a profession and a trade (the fact that the exercise of a profession rests upon the personal effort and skill of the practitioner, while it is customary to drive a trade by the multiplication of assistants who are adequate representatives of the tradesman to the customer) does not seem to have presented itself to the thoughts of our contemporary, or at least is not mentioned in any of the articles. It is manifest, none the less, that the difference is an important one; and that it must always serve to maintain a personal tie between practitioner and client which is absolutely non-existent between trader and purchaser. The practitioner, whether medical or legal, is directly responsible for the opinion which he gives or the practice which he pursues; the trader either does not admit, or can easily evade, responsibility for the acts and statements of the majority of the persons in his employment. The difference is no doubt to some extent responsible for a general laxity of statement in matters of trade, to which no parallel can be found in professional intercourse, and which only fails to deceive or to injure because it is so generally or even universally discounted by those to whom it is addressed—at least when these belong to the really educated classes. The results of board school teaching, there is too much reason to believe, have been definitely injurious to many of the poor by enabling them to read the abounding falsehoods put forth by trade advertisers, while giving them no assistance in respect of judgment. The physical deterioration of the children of the poor, to whatever extent it may exist, is certainly due in some measure to the purchase by their parents of innutritious foodstuffs, recommended to their notice by flaring posters and artfully designed illustrations. It is much to be wished that either municipal authorities or some Government department, such, for example, as the Local Government Board, would render the public service of issuing notifications concerning the true values of advertised compounds and would thus save the ignorant from being victimised by a form of "commercialism" which more than justifies all which the *St. Louis Medical Review* has said concerning its most injurious developments. The knowledge necessary for this purpose could, of course, be supplied by the medical profession, but it could not be supplied publicly without risk to any private persons concerned in the endeavour. As the *Review* reminds us, the purchaser who tenders spurious coin or false bills in exchange for goods is regarded by "commercialism" as a criminal for whom no condemnation could be too severe, while the vendor who palms off some worthless article in exchange for the genuine coin which he receives is considered worthy of commendation as a "smart" business man. The law of libel would probably be successfully invoked for the purpose of restraining truth-telling with regard to advertised preparations.

Another important question dealt with by the articles before us is that of the promotion of "the interests of the profession in opposition to those of the public." "Right there," we are told, in Transatlantic idiom, lies the spirit of commercialism in its most dangerous form, no longer confined to sporadic cases but epidemic and virulent. We are told, the experiences of the United States being employed as an example, that when any vocation placed in an especially philanthropic relation to the public, as a result of the public's helpless dependence upon it, begins to admit among its motives for seeking special legislation "the interests of the profession" it is becoming a menace of the worst kind to the public good. The moment we lose sight of the fact that the beneficent professions as such are the servants of humanity "that moment we become charlatans. The public good, and that alone, is the sole justification for medical legislation, whether it relate to practice, to the suppression of quackery, the prohibition of indecent advertising, or the abolition of the alcoholic nostrum and secret remedy traffic." We are glad to quote these opinions from our contemporary. The evils referred to are, on

the whole, probably greater and more conspicuous in the United States than even among ourselves, but they are severe enough with us. Their removal, however, so far as legislation can effect it, can only be accomplished by measures which clearly have not been designed for the protection of medical men rather than for the protection of the public. This is why some of the efforts for the mitigation or removal of professional abuses, which have found favour among many in this country, seem to us to be foredoomed to failure. These efforts have often been of a kind calculated to create antagonism between the profession and the legislature and, secondarily, between the profession and the public, and it is manifest to common sense which of the antagonists, in either case, would have to endure the consequences of defeat. The true policy of the medical profession, we are convinced, is to identify itself with the interests of the public and never to act in even apparent opposition to them. To quote once more the hackneyed phrase, we should strive to educate our masters, to produce an enlightened appreciation of the aims and tendencies of medicine, and to show that the evils of which we complain are far more injurious to the body politic than to our own limited community. We have arrayed against us, no doubt, a great body of "commercialism" under its worst aspects, the quack, the abortionist, the quack medicine seller, and the not inconsiderable body of traders who live by the preparation and advertisement of worthless compounds of various kinds. The impatience of professional dictation which characterises so large a proportion of the public must necessarily be aroused by any attempt to suppress the practices of these persons unless it is shown beyond a shadow of doubt that the benefit of such suppression will accrue to the public and not to our own class.

Annotations.

"Ne quid nimis."

THE REFORM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ALL our readers know that we consider the position of the Members of the Royal College of Surgeons of England to be a very unfair one. The Members form more than eleven-twelfths of the College and supply the funds upon which the College exists, but are permitted no voice in the management of the College. They cannot sit upon their governing body, they cannot even exercise a vote in the selection of that governing body, while the governing body chooses the representative who speaks with the voice of the College at the council board of the General Medical Council. The present President of the College, Mr. Tweedy, whose knowledge of the constitutional history of the body over which he presides is unrivalled, demonstrated in our columns, in an article which afterwards appeared as a pamphlet and which has been widely quoted by all reformers, that the position of the Members is unfair, and over and over again prominent Fellows of the College have signified their adherence to this view. Why, then, does not reform follow? We are constrained to think that the Members themselves are in fault, that their apathy in bulk and the methods of their mouthpieces have prevented any change from taking place. We admit this with regret because we have always been desirous of promoting the cause of just reform, but knowing all the facts we can see no other explanation of the situation. The Members have not shown any power of union or any tact or discretion. If a really considerable number out of the 18,000 (including Fellows) would associate themselves to make a demand for a hearing, and would agree upon what they should ask for as a minimum, it is certain that they would obtain an answer; and inasmuch as election to the Council of the College does not deprive a man of his reason or his morality, it is equally certain that that answer would be prompt, would be reasonable, and would lead to amicable discussion for the removal of grievances which are admitted on all sides to exist. But the College authorities are certainly right in asking that they should know the number of those who demand a hearing, while the proposals for reform should be set out by persons who know the history of past efforts and who can appreciate the difficulties of the present situation. We publish this week a letter from Dr. W. G Dickinson, honorary secretary of the Society of Members of the Royal College of Surgeons of England, in which he explains that he had no intention of suggesting that an attempt had been made by the Council of the College to nobble the Privy Council by asking the secretary of that august body to dinner. The suggestion was in his letter and we are glad to note that it got there by accident, but it is the sort of accident that should not occur and which renders the course of constitutional reformers doubly difficult. Ten years ago, we have reason to know, the Members of the College had every chance of obtaining representation upon the Council. Their just claims were supported by a powerful section of the Fellows, and if they could have exercised a little more patience the victory would have been won, a result that would have been especially grateful to us who had so long been associated with the movement for reform. Suddenly a group of Members found that the reform party was not moving fast enough, what was termed "plain speaking" was indulged in, mistakes were made, tried friends were alienated, and the cause of reform slipped back to where it now is. There are no reasons but two why that cause should not again emerge and we have mentioned them both: they are the apathy of the Members and the tactlessness of the spokesmen. Cannot the whole movement be re-organised?

THE BATTERSEA BOROUGH COUNCIL AND ITS MEDICAL OFFICER OF HEALTH.

IN THE LANCET of March 24th a correspondent called attention to the unusual conditions which the Battersea borough council had attached to the appointment of medical officer of health, then vacant. As a result of revision of the council's standing orders the new officer was required to carry out his duties by a system of "coöperation and conference" with the chief sanitary inspector of the borough. This system was further developed by a new clause in the standing orders stipulating that the medical officer was only to communicate with the various sanitary inspectors, male and female, through the medium of the chief sanitary inspector. In short, save for certain provisions regarding infectious diseases, the orders had the effect of preventing the Battersea medical officer of health from occupying his proper position as chief of the sanitary department. Public health administration in Battersea has in recent years been distinguished for initiative and success in dealing with many of the problems presented by a London working-class district, and it was easy to see that the new scheme was retrograde and if it took effect that it would seriously cripple the efficiency of the sanitary service. The matter has attracted considerable attention,

partly from the fact that the borough is represented in Parliament by the President of the Local Government Board and partly because of the great objection to the introduction into London, in an exaggerated form, of a system of dual responsibility which has notoriously broken down in Glasgow and other cities. We are glad to learn that the Battersea borough council has now reconsidered the whole question in consequence of representations from the Local Government Board and the London County Council and has decided to delete the clauses to which so much objection has been taken.

THE CHICAGO STOCKYARDS AND THE MEAT SCANDAL.

WE have every reason to congratulate not only ourselves but the public at large on the fact that the scandal of the Chicago stockyards and packing-houses has come to a head. Our readers will remember that in January, 1905, we published a series of four reports from our Sanitary Commissioner describing what he had just seen at Chicago. The denunciations then made have since been reinforced by the publication of a novel called "The Jungle," written by Mr. Upton Sinclair. What with the controversy which our reports occasioned and the sensational interest created by this novel some knowledge of the evils depicted have reached the President of the United States; consequently there is now every hope that something effective will be done. Mr. Neill and Mr. Reynolds were appointed to report on the matter to the President and they have issued a preliminary report. According to the Chicago correspondent of the London *Tribune*, a synopsis of this report has been published and we are told that:—

> The report describes the condition of the six plants inspected as filthy, insanitary, and unhygienic. The walls and floors, it is stated, were saturated with blood and grease and were well qualified to convey disease. No attempt was made to exercise ordinary cleanliness. No means of ventilation were provided in some of the rooms, with the result that nauseating odours prevailed. The employees expectorated on the floors, on which some of the chopped meat frequently fell. The men could thus easily gather bacilli on their boots and transmit them to the meat.

The above lines read like a summary of the description which we published notably on Jan. 14th, 1905. Thus on p. 122 of that issue will be found the following lines:—

> In a short time the bullock, whether it has died sufficiently or not, and while still warm, will reach one of the darkest, lowest, and worst ventilated portions of this huge and gloomy building. Here the entrails are taken out. The dirtiest work is done in the closest, the darkest, and the dirtiest place, instead of being carried on in the open air or under such slight shelter as would not prevent the free access of air and sunshine. It would be quite impossible to disinfect such premises. There are innumerable rafters, sharp angles, nooks, and corners where blood, the splashing of offal, and the sputum of tuberculous workers can accumulate for weeks, months, and years.

Then a little further there occurs this passage:—

> It is obvious that work of this description—the manipulation of animal substance intended for food—should be done only in the broadest daylight and in the purest atmosphere. In these dark places the meat falls on the floor and comes in contact with the dirt from the boots of the workers and the bacilli from the sputum of a population among whom pulmonary tuberculosis is more prevalent than among any other section of the inhabitants of Chicago.

Thus apparently the official report confirms our report. The evils which we denounced some 18 months ago are now being re-echoed by the press of all countries. In political newspapers and many other publications the facts to which we bore witness are being stated and re-stated, so that now it will be quite impossible to go back on these disclosures. The American public is thoroughly roused and the public in Europe is likewise taking precautions. The stockyards of Chicago will not be allowed for much longer to continue their barbaric and insanitary methods of preparing meat for human consumption. The part which we have had the opportunity of playing in bringing about this great and beneficial outcry will not fail to be recognised and the public may now hope to escape from a danger which was yearly increasing in magnitude. We shall return to this important question at length when a few more facts have been ascertained in regard to the more recent measures taken at Chicago. We have received from Messrs. Armour and Co. of Chicago, &c., the following disclaimer:—

> All beef, pork, mutton, or other food products, canned or otherwise, shipped from our packing houses are inspected by United States Government inspectors, who have full and free access at all times to all parts of our plants in accordance with the Act of Congress, March 3rd, 1891, which provides "that the Secretary of Agriculture shall cause to be made careful inspection of all live animals and the meat thereof intended for export, and that no steamer may clear from our ports carrying meat products until the certificates of the Department of Agriculture shall have been obtained and filed with the proper port authorities." Further, all cattle, sheep, and hogs which are the subject of interstate or foreign commerce are inspected both before and after slaughter. Furthermore, any carcass, or part thereof, found by the United States Government inspectors to be in any way diseased or unfit for food is condemned by, and destroyed under, the personal supervision of the United States Government inspectors.

THE TREATMENT OF CEREBRAL, SPINAL, AND NEURAL PARALYSES AND ATHETOSIS BY TRANSPLANTATION OF NERVE.

IN an important paper published in the *American Journal of the Medical Sciences* for March Professor W. G. Spiller, Professor C. H. Frazier, and Dr. J. J. A. van Kaathhoven point out that transplantation of nerve opens a new field for the treatment of selected cases of paralysis, whether cerebral, spinal, or neural, and also for the treatment of athetosis. The operation was first performed for the treatment of anterior poliomyelitis by Peckham.[1] In a case of ten years' duration he cut two of the four branches passing from the internal popliteal nerve to the heads of the gastrocnemius and inserted them into the diseased nerve. After six weeks the toes could be extended—a motion previously impossible. No weakness in the gastrocnemius and soleus muscle was apparent but the result was not considered very gratifying and his paper received no attention. In 1902 Professor Spiller independently suggested that transplantation of nerve should be tried in cases of anterior poliomyelitis in which the paralysis was not very extensive. The first operation was performed by Dr. Young at his request in December, 1902. In February, 1903, some return of power could be observed and this subsequently became distinct. The central end of an efferent fibre can make functional connexion with the peripheral end of any other efferent fibre. This is the physiological law upon which is based the treatment of paralyses by transplantation of nerve. Several methods have been adopted which have given variable results but the cases are yet too few for any conclusions as to their relative value. The methods are lateral anastomosis of the peripheral segment of the nerve supplying the paralysed muscles into a normal nerve, lateral anastomosis of the central end of a segment split from a normal nerve into the affected nerve, end-to-end anastomosis of the peripheral segment of the affected nerve with the central end of a segment split from a normal nerve, and end-to-end anastomosis of both the central and peripheral ends of the affected nerve into the split segments of a normal nerve. At the meeting of the Deutsche Gesellschaft für Chirurgie in 1903 Hackenbruch reported that he had inserted a third of the tibial nerve into the paralysed peroneal nerve in a case of poliomyelitis. Slight improvement was seen four months after operation, and one and a half years after movements of the foot were good and the patient could elevate himself on his toes and stand on the foot alone. The limb had become one centimetre longer and the foot had become larger. The limb as a whole was a little weaker than the other. In 1904 Dr. Wilfred J. Harris and Mr. V. Warren Low reported to the Clinical Society a case of cure of infantile paralysis of the shoulder by nerve grafting.[2] The

[1] Providence Medical Journal, January, 1900.
[2] THE LANCET, Oct. 22nd, 1904, p. 1152.

patient was a child, aged 20 months, with complete paralysis of the right deltoid, supra- and infra-spinatus muscles, wasting, and reaction of degeneration. Four months after the attack, there being no signs of recovery in spite of massage and galvanism, the fifth cervical nerve was split longitudinally; its upper half, containing the majority of fibres for the suprascapular and circumflex nerves, was cut across and its distal end was sutured into a nick in the sixth nerve. Six months later signs of recovery were noticed. 15 months after operation the child could raise the arm above the head. In violent athetosis the muscles hypertrophy from constant use, the flexors in the upper limbs being usually much more powerful than the extensors. It occurred to Professor Spiller that if some of the excessive innervation of the flexors were "switched off" by transplantation of nerve a more normal relation between the muscles might be established and the movements diminished. A young man under his care had suffered from violent athetosis of the upper limbs during all his life. The muscles were much hypertrophied and the flexors were much more powerful than the extensors. Professor Frazier performed lateral anastomosis of the divided median and ulnar nerves to the musculo-spiral nerve in the left arm. After the operation the movements of the arm diminished. A month later, to control the athetoid movements of the shoulder, the circumflex and musculo-spiral nerves were divided and end-to-end anastomosis was performed between the central end of one and the distal end of the other and *vice versâ*. After six months there was little jerking of the limb and the fingers and wrist could be partially flexed, the forearm normally flexed, and the arm partially raised.

ANARCHISM AND ASSASSINATION.

"THE thrill of horror," writes an Italian correspondent, "that ran through Italy at the fiendish attempt on the King and Queen of Spain was followed next moment by a sense of relief that the perpetrator was not an Italian, only to return in greater force with the announcement that a plot had been unveiled at Ancona to assassinate her King and Queen. Bitterly she is made to feel that, with all her material development, there has been no moral advance sufficiently potent to check the destructive forces within her organism, and that a part of her population, certainly not lessening, if not actually increasing, is determined on vindicating for her the sinister title of 'In terra classica' of homicide. Her own science, as she is pleased to claim it, of 'criminal anthropology,' at its recent and most successful congress at Turin, had free scope in its enumeration and analysis of the causes of this lethal spirit, but in its dealing with the remedy it could do little more than point to a number of antagonising forces which may one day minimise, if not extinguish, the malady. Temperament, in which the emotions are in the ascendant, culminating in a jealousy quick to resent and prompt to act, explains not a little of the homicidal impulse, especially when the knife is the universally recognised weapon of attack or defence. 'Vendetta,' traditional in the popular mind, fostered by an absolute distrust of the law for protection or reparation, and elevated to something like a duty by the teaching of the Revolution and its theory of the 'moral dagger,' has also its place in the 'conditions precedent' of the phenomenon. 'Miseria' or hardness of living, which makes incarceration almost welcome and robs death of half its terrors, may also account for the readiness to defy the legal tribunal, especially when this has no longer the power to inflict capital punishment. All those incentives to lethal crime common to Latin countries and most pronounced in their typical representative Italy, seem still unaffected by countervailing influences of any kind and will, it is feared, for a long time to come continue to make the said countries, and their Italian sister more particularly, the recruiting ground for the minions of anarchism. The congress convened in Rome some seven years ago to suggest common action against the anarchist and his methods came to no practical conclusion but not a few suggestions were tabled and discussed which, if carried into effect, would make the 'rôle of regicide' not quite so fascinating for the majority of such 'saviours of society.' Vanity, conspicuous in such 'degenerates' as Luccheni, who murdered the Empress of Austria, or Angiolilli, who assassinated the Spanish Premier Canovas, would lose strength as a motive if the trial succeeding the crime were conducted with less publicity. Again, the imitative instinct so accentuated (according to Lombroso) in the 'pithecoid' man 'would find less pabulum to feed upon were the public press to agree to a common minimising of detail in its reports of such crimes.' Obvious procedure such as this might be adopted with advantage. But society, it is feared, must wait till the slow process of self-rehabilitation and development on healthier lines has achieved its legitimate results and made the profession of the anarchist and the lethal rôle of his minion as much a thing of the past as the mediæval 'trial by torture' or the death penalty as doled out by the 'Virgin of Nürnberg.'"

BALNEOLOGY AND BALNEO-THERAPEUTIC TREATMENT.

AT a meeting of the British Balneological and Climatological Society held on May 16th Dr. Frederick T. Roberts read a paper entitled "Some General Comments on Balneology and Associated Methods and on Spas." After a short reference to balneology in the home and in ordinary life, and to sea or ocean bathing and treatment at so-called "marine spas," he next proceeded to deal at more length with the employment of balneological and associated methods for definite therapeutic purposes which medical practitioners could utilise in the treatment of a variety of morbid conditions. In illustration of this aspect of his subject Dr. Roberts referred to the use of warm or hot baths and local application of moist or dry heat for different purposes; antipyretic, balneological, and other measures, primarily intended to bring down bodily temperature but often beneficial for other purposes in febrile cases; local application of cold, especially by means of the ice-bag, in the treatment of internal inflammations and other morbid states; disinfectant and anti-parasitic methods applied to the skin; treatment of different kinds for cutaneous affections, including the application of the Roentgen rays and light and colour treatment; diaphoretic measures for producing free sweating; treatment for arthritic morbid conditions; the use of special baths for syphilis; a variety of methods applied to affections of the nervous system; and the Nauheim treatment as carried out in this country, either privately or in hotels or certain institutions. Another practical and highly popular outcome of balneology is what has been more particularly described as "hydrotherapeutic treatment" or "hydrotherapy," which is methodically carried out in hydropathic establishments. These institutions are now in considerable number in this country and many of them occupy most salubrious positions, are situated in the midst of highly attractive scenery, and are really most comfortable or even palatial and luxurious. The original intention of a "hydro" was to practise a systematic water treatment, or so-called "water cure," aided by attention to general measures, but nowadays the treatment has to a great extent lost its primary simplicity and in some instances all the most recent scientific methods and appliances have been introduced. Attention was called

to the necessity of the therapeutic work in such establishments being under the immediate supervision and control of a properly trained medical staff. He also referred to the relations existing between the medical profession generally and the residents at these establishments and urged the desirability of more cordial coöperation between them. Coming to the last division of his subject—namely, treatment at spas—Dr. Roberts defined a spa as a locality in which there existed either a natural hot (thermal) spring of simple or so-called "indifferent" water, or springs of mineral water, varying much in composition, and where establishments were provided for the systematic treatment of patients by these agencies. He mentioned that the term "balneo-therapeutics" has been specially applied to the external and internal use of these natural mineral waters and thermal springs. He alluded to the general groups into which they have been divided and summarised the methods of treatment which are adopted at different spas. Incidentally he spoke in favour of the leading spas in this country as well as of the possibilities in this direction afforded by our colonies. He also dwelt upon the deep sense of responsibility, more especially in relation to spa treatment, which ought to be realised by the medical man advising such treatment, as well as by those carrying it out, who should be competent resident practitioners having full knowledge and experience of the agencies and methods at their command and of their practical application. Finally, Dr. Roberts urged that a more intimate personal acquaintance, with mutual coöperation and more frequent opportunities of practising the courtesies of social life, ought to help materially in bringing about a closer union between the medical profession generally and those of its members who devote their lives and energies to spa treatment.

THE USE OF RUBBER GLOVES IN MEDICAL WARDS.

IN THE LANCET of June 2nd, p. 1533, we published an article by Dr. T. W. Clarke, late resident physician at Lakeside Hospital, Cleveland, U.S.A., advocating the use of rubber gloves in medical wards. The employment of such gloves in surgical operations, especially when pus is likely to be present, is becoming more and more general, but for routine use in the medical wards they are not likely to be adopted generally. The operations in medical wards are usually of a slight nature and consist mainly of paracentesis and the introduction of Southey's tubes. In these instances the importance in cleanliness of the instruments employed cannot be exaggerated, but infection is not likely to arise from the operator's hands if the ordinary care obligatory on every practitioner is carried out. The use of gloves, however thin, does, in the opinion of many surgeons, interfere to some extent with the sense of touch and manipulation. Therefore with regard to some conditions mentioned by Dr. Clarke, such as those that require digital examination of the rectum or of the uterus, the use of gloves, although possessing the advantages claimed by him, may partially obliterate the delicate tactile sense necessary for making a correct diagnosis. Dr. Clarke, however, maintains that "as much can be made out with a glove as without one." With regard to certain other points in Dr. Clarke's paper we are more in accord. The majority of cases of infectious diseases are now treated in special hospitals, but in the wards of general hospitals cases of typhoid fever and of the summer diarrhœa of children are still admitted and without any evidence of danger to the other patients in the wards. Occasionally, however, nurses and medical officers contract typhoid fever in the performance of their duties. The nurses receive full instruction as to the importance of thoroughly disinfecting their hands after touching the patient or his clothing and after removal of the excreta and we believe that, as a rule, the cleansing of the hands is thoroughly carried out. Nevertheless, Dr. Clarke's remarks on this subject are worthy of consideration and his account of an epidemic of typhoid fever in Cleveland in January, 1904, in which rubber gloves were extensively employed by the nurses, is certainly suggestive. Not only was the risk of infection lessened by the use of the gloves but it was found that the hands of the nurses, previously rendered cracked and sore by frequent soaking in carbolic acid, resumed their normal healthy condition. The gloves were strong and large so that no time was lost in the difficulty of putting them on and taking them off again. The adoption of such gloves in fever hospitals may thus prove of considerable advantage. In this country severe epidemics of "summer diarrhœa" or of "vulvo vaginitis" are uncommon but should such occur the use of rubber gloves by the nurses might prove of great advantage.

ROYAL INSTITUTE OF PUBLIC HEALTH.

THE summer session of the Royal Institute of Public Health opened on June 7th, when Lieutenant-Colonel W. B. Leishman, professor of pathology in the Royal Army Medical College, delivered a lecture on Pathogenic Spirochæte. On June 14th Dr. Louis W. Sambon, director of the Department of Parasitology in the Institute, will take for the subject of his discourse the Rôle played by Animals in the Causation and Transmission of Disease. This will be illustrated by lantern slides, a large number of coloured diagrams by Signor Terzi, and microscopical and other specimens. On June 21st Lieutenant-Colonel R. J. S. Simpson, C.M.G., professor of tropical medicine in the Royal Army Medical College, will deliver a lecture on Some Features of the Occurrence of Enteric Fever in the British Army. On June 28th Dr. S. Monckton Copeman, F.R.S., medical inspector to the Local Government Board, will discuss the Prevalence of Cancer, thus leading up to the last lecture of the session, which will be delivered by Professor G. Sims Woodhead, professor of pathology at the University of Cambridge, who will deal with some of the questions raised by recent researches on Cancer. The lectures will be delivered in the lecture theatre of the Institute, 37, Russell-square, London, W.C., at 5 P.M. on the various Thursday afternoons, and all persons interested in the subjects dealt with are invited to attend.

COCOANUT OIL AS AN ARTICLE OF FOOD.

OWING to the relatively high price of butter there is a growing demand for cheaper fatty foods, especially among the poorer classes. Attention has already been called in THE LANCET to the nutritive value of margarine and ordinary dripping, and during the past few years cocoanut oil has found much favour as an article of diet. In the first number of the *Philippine Journal of Science*[1] a series of papers deals with the cultivation of the cocoanut palm and the production of the oil. The nuts are split in two, the "milk" being allowed to run to waste, and dried in the sun or in a kiln for a few days. The "meat" is then removed from the shell and further desiccated, when it forms the copra of commerce. A number of nuts which were stored for six months and had not sprouted were found to contain 20 per cent. of shell, 34 per cent. of "milk," and 46 per cent. of "meat," equivalent to 19·5 per cent. of copra or 12·4 per cent. of oil, the percentages being calculated on the weight of the nuts free from husks. The dried copra therefore contains over 63 per cent. of oil. Analysis showed that on an average the fresh "meat" of a cocoanut contains

[1] Published at Manila by the Bureau of Science of the Government of the Philippine Islands.

4·683 grammes of nitrogen, 2·475 grammes of potash, and 1·74 grammes of phosphoric acid. It is of interest to note that the "milk" of the cocoanut contains on an average 1·542 grammes of nitrogen, 1·313 grammes of potash, and 0·171 gramme of phosphoric acid. The analytical data given are by no means exhaustive but they are sufficient to show that as regards the high yield of oil and the presence of considerable amounts of nitrogen, potash, and phosphoric acid the cocoanut possesses a distinct nutritive value. As cocoanut oil has been largely employed as a food without the production of unfavourable results, and as it is sold at less than half the price of butter, there would appear to be good reasons for the further extension of its use as an alternative to butter, especially since its peculiar flavour has been eliminated by a process of purification.

REFORM IN THE ARMY MEDICAL SERVICE.

THERE was published in the *Times* of Wednesday last a very interesting letter from Mr. Brodrick, who, of course, was Secretary of State for War at the time of the South African struggle. Mr. Brodrick's letter dwelt with perfectly legitimate self-congratulation upon the improvements that were made in the Royal Army Medical Corps during his momentous service as a Minister of the Crown. The reforms introduced in 1901 and 1902 in respect of pay, terms of service, and study-leave of the corps were welcomed by us at the time when they were instituted as evidence that the War Office had at last realised the absolute necessity for reorganising the service; and there is no doubt that these reforms followed closely the recommendations of Mr. Brodrick's committee. The comparative popularity of the service since the institution of the important changes contained in the present Warrant is attested by the increased number of candidates and is in accordance with our prognostications. The service is still not an ideal one, but the new Warrant has been successful and better things may follow. In Mr. Brodrick's scheme the Director-General of the Army Medical Service had a seat at the board of the Army Council. He has since been relegated to a place in the Adjutant-General's Department. This is an error which time may set right and we do not take an unduly sanguine view when we look forward to the Royal Army Medical Corps in the near future attracting a regular supply of able, progressive, scientific medical men. But Mr. Brodrick's letter goes on to point out how unsatisfactory is the position of the army medical officer during a campaign, and, attributing much of the difficulty of organisation to the ignorance of the combatant officers with regard to sanitation and all allied subjects, he suggests that every cadet at Sandhurst or Woolwich should be examined on passing into the actual army upon the elements of military hygiene. The comparative immunity of the Japanese army from disease during the recent war with Russia was certainly due to the knowledge, not only by their combatant officers but also by the rank and file, of the simpler proceedings of preventive medicine; and it is certain that if our officers and men had been as far-sighted and as generally well informed during the South African war our tale of sick and dead would have been a less appalling one. This alone is a sufficient proof of the value of Mr. Brodrick's suggestion, and we are sure that the whole not only of the Army Medical Service but of the medical profession will be glad to learn that Mr. Haldane is giving serious attention to the matter.

A TELEGRAM from the Governor of Hong-Kong received at the Colonial Office on May 29th states that for the week ending May 27th there were 116 cases of plague and 116 deaths from the disease. As regards the Cape Colony the medical officer of health of the colony states that for the week ending May 12th there were no cases of plague.

THE annual Bolingbroke lecture in connexion with the South-West London Medical Society will be delivered by Mr. Edmund Owen on "Some Stray Thoughts upon Tuberculosis" on Wednesday, June 13th, at 9 o'clock P.M., at the headquarters of the 4th Volunteer Battalion East Surrey Regiment (opposite Clapham Junction Station). Members of the profession desiring to be present will be welcomed.

THE Council of Epsom College has unanimously resolved to recommend to the Governors at the annual general meeting on June 29th that Mr. Henry Morris be appointed treasurer to the College in place of Sir Constantine Holman.

THE death is announced of Sir Willoughby F. Wade, consulting physician to the Birmingham General Hospital, and an ex-President of the British Medical Association.

Sir Frederick Treves has undertaken to deliver a lay sermon on Hospital Sunday, June 17th, at 11 A.M., in Union Chapel, Islington.

King Edward VII. Sanatorium at Midhurst will be formally opened on Wednesday next, June 13th, at 4.30 P.M., by the King in person, who will be accompanied by the Queen.

THE HARBEN LECTURES FOR 1906.[1]

Delivered at King's College (University of London) on May 25th, 28th, and 30th, 1906,

BY PROFESSOR ELIE METCHNIKOFF.

LECTURE III.[2]

Hygienic Measures against Syphilis.

SINCE it had been shown to be possible to guard both the skin and the alimentary canal against the attacks of insects and of entozoa conveying the virus of disease, one might imagine that it would be far easier to preserve oneself from the virus that man transmitted to his like. In fact, flies and mosquitoes flitted freely round and it was often difficult to avoid or to seize them, whilst they could sting even through the clothes. The ova and larvæ of intestinal worms found their way into the human body most frequently in food and drink. Yet, in spite of so many difficulties, it was possible to eliminate the danger of contamination by the viruses which accompanied those lower animals. How, then, did it happen that man ran a greater risk of being infected by a virus existing in other men? Man was the principal source of contagion in tuberculosis, influenza, and many other diseases of the respiratory organs. Man, again, carried about and communicated without intermediary the virus of venereal diseases. Since, then, both the organism which furnished and the organism which received the virus belonged to the human class, provided with the power of sense and of reasoning, it might appear simple and easy to avoid all danger. But in reality it was not so. Thus, according to Lenoir in Paris among 100 men at least from 13 to 16 infected individuals might be counted. It was mainly the young people who paid the greatest tribute to the disease. Soldiers and sailors, selected as they were from amongst the hardiest of the nation, suffered from it most frequently. In the English army the number of days on which soldiers were off duty for syphilis had nearly trebled during the time from 1880 to 1897, whilst the number of men had only been doubled in that period. The greatest increase observed was in the number of secondary lesions. At Netley Hospital in 1897 about one-third of all the patients were suffering from venereal diseases, the number of which showed an increase of 15 per cent. in 15 years.

It was useless to insist on the great frequency of syphilis among those persons in whom it was, if he might use the term, a professional disease, for everyone was sufficiently well informed on that head. But he thought it might be worth while to call attention to the great number of cases of non-venereal syphilis. In some countries where the precepts of hygiene were hardly at all observed, the inhabitants of

[1] These lectures were delivered under the auspices of the Royal Institute of Public Health.

[2] Lectures I. and II. were published in THE LANCET of June 2nd, 1906, p. 1553.

which lived in a most extraordinary promiscuity, infections were of very common occurrence. In such cases syphilis chiefly attacked the children. In that respect the syphilis of the rural population of Russia presented features of special interest. In Russia the promiscuity, the indigence, and, above all, the ignorance of the rural population, as well as the entire absence of sanitary measures, were the reasons for the ever-increasing spread of the disease. After penetrating into an obscure hamlet 30 or 60 miles away from the habitation of a medical man, the disease of necessity established itself at every hearth and spared none. This terrible dissemination was not brought about by prostitutes but most commonly the little children, by their games and their caresses, sowed the infection broadcast. No one doubted the great frequency of syphilis, but there were many even among the medical profession who did not believe that the disease had a great influence on mortality. They said that it was amenable to treatment and that syphilitic persons might live long. It was quite true that syphilis by itself was not a fatal disease. In so-called malignant syphilis there evidently existed some secondary infection which became generalised and was fatal through septicæmia. Syphilis, however, was one of the most important causes in shortening human life and in bringing about mortal diseases.

Next to tuberculosis, syphilis played the most important rôle in the death-rate of persons whose lives had been insured—i.e., of the most vigorous part of the population. For a long time the dread of syphilis had been general and there were frequent cases in which victims of the disease had committed suicide. That fear was partly caused by the prospect of disfigurement by tertiary lesions and partly by the dread of becoming a source of infection to their fellow-creatures. Yet suitable treatment and hygienic precautions might to a great extent lessen that evil, for tertiary syphilis was rare amongst persons who had received proper treatment. It was the fear of the numerous diseases following in the train of syphilis which rendered life unbearable to the persons who had acquired it. It had been said that syphilis spread above all because the young folk were ignorant of the great danger that they were running into and it was urged that they should be taught; young boys and girls should be given some ideas on venereal diseases and into their later teaching should be introduced a chapter on that question. But the answer to those suggestions was that that reform would give rise to many objections without being sufficiently effective; for they all knew that, in spite of having been adequately warned, young medical men and students of medicine furnished a large proportion of victims. Ignorance was, therefore, not the only cause. As one of the strongest measures against syphilis early marriages had been recommended. Young people should, it was said, marry early so as to escape infection. But it was rarely possible for young men to marry before they had finished their course of studies. Now it was well known that syphilis was found only too often in scholars of the public and high schools as well as in young girls who had not come of age. Therefore one would have to advise the marriage of minors which was contrary to the principles of evolution. Professor Metchnikoff did not enter into a detailed discussion of the question but stated that to his mind the principle of marrying young as a safeguard against venereal infection could not be regarded as practicable. Nor did he go fully into the much-debated question of regulation or abolitionism in the fight against venereal diseases. Great Britain, proud and jealous of her liberties, pushed her liberalism even to the liberty of communicating contagious diseases. Abolitionism originated on English soil and had thence spread to other countries. There could be no doubt that the regulation of prostitution was a very imperfect thing. Nor could there be any doubt that the restriction of liberty was most disagreeable and vexatious. Nevertheless, until a new order of things, regulation, even though partial and imperfect, was better than unlimited freedom. Assuredly it would be a great step forward if some method were discovered which made regulation and all intervention of public authorities superfluous and thus insured mankind against syphilis by practical and simple means, dependent only on the will of those risking contagion. A mode of prevention of syphilis by means of vaccines, strictly speaking—i.e., by means of attenuated virus or by products of the virus—might possibly succeed but in the search for these products the same difficulties were met with as in the preparation of an efficient serum.

In order to transform a virus into a vaccine by treating it with chemical substances or by subjecting it to physical agencies it was essential to possess larger quantities of it than were present in the syphilitic matter of chancres, of the inner organs, or the blood. They must therefore wait for the time when they could possess cultures of the syphilis spirillum. For the time being it was of no use entering into the question of antisyphilitic vaccines. Professor Metchnikoff detailed experiments showing that the syphilitic virus of Macacus rhesus was attenuated by several passages, so as at last to lose its virulence for that species of monkey and that the chimpanzee might strengthen that weakened virus. Since the zoological distance between the macacus and man was greater than that between the macacus and the chimpanzee one might suppose that the virus of the macacus would act on man differently from the chimpanzee. A chance occurrence had thrown some light on that problem. One of his laboratory assistants who took an active part in the experiments and who frequently handled the syphilis-infected monkeys one day noticed an ulcer on his lower lip which appeared suspicious to him. However, since the lesion was not accompanied by any swelling of the lymphatic glands and since it healed soon after its appearance it was forgotten for the time being. Not until a month later, when the assistant noticed on the same lip an ulcer similar to the first, did he think it necessary to apply for medical advice. However, since there was no swelling of the lymphatic glands and since the lesion on the lip appeared to be superficial and insignificant there was no reason to consider it as a syphilitic affection. In order to be quite sure a Javanese macacus was inoculated with some fluid drawn from the small ulcer. Great was the astonishment of all concerned when, four weeks after the inoculation, two most typical primary lesions were observed on the eyebrows of the macacus. All doubts ceased when those lesions of the monkey were found to be teeming with Schaudinn's spirilla. The assistant, made anxious by the discovery, consulted Fournier, the greatest living authority on syphilis, so as to ascertain whether mercurial treatment would be necessary. After a most thorough examination the eminent savant emphatically denied any such necessity. He found nothing to justify the diagnosis of syphilis and did not advise any treatment to be undertaken. The non-occurrence of any, even the slightest, suspicious symptoms in the space of six months justified the advice given. Clinically the assistant did not suffer from syphilis and yet the ulcer on his lip caused an absolutely characteristic primary lesion in the macacus. An explanation of this most contradictory result could only be given by assuming that the assistant had through some carelessness got his mouth infected with virus from a macacus which acted on him like a very attenuated virus. The hypothesis of a former syphilis, which might have explained the slightness of the lesion following an accidental reinfection, must be absolutely excluded, for the assistant never had syphilis.

After obtaining these data Professor Metchnikoff consented to the inoculation of a human being with virus passed through a macacus. From a number of persons who had repeatedly begged for the effect of antisyphilitic vaccination to be tried on them, an aged female was selected who asserted that she had never had syphilis and who offered herself of her own free will to an experiment of that kind. The most minute examination justified that assertion. The virus, which had been passed through a Macacus sinicus, was inoculated on three different parts of her forearm. After an incubation period of 12 days there appeared two small non-ulcerated pustules of a reddish-brown colour which resembled the pustules of secondary syphilis. After several weeks they disappeared, leaving only two pigmented spots. As in the case of the assistant, neither any swelling of the lymphatic glands nor any other secondary lesion had been observed for over half a year. Such were the facts which led to the belief that the macaci might attenuate the syphilitic virus for their own species and for man. Those facts, of course, gave only a first indication and they were still far from possessing a method of antisyphilitic vaccination. Even if, at a later stage, the existence of a vaccine against syphilis were conclusively proved, it could only be employed under very exceptional conditions. The attenuated and therefore living virus might, in fact, bring about most awkward complications if used on a large scale. They knew that some of the patients suffering from general paralysis and from tabes had only shown quite insignificant syphilitic lesions. Only to

those persons who were exposed to the greatest risk of acquiring human syphilis might one propose vaccination with an attenuated virus. Those persons to benefit first from vaccination would have to be selected from among the beginners in prostitution. It was an established fact that those women only in exceptional cases escaped syphilis. As almost all of them were therefore condemned to acquire that disease vaccination would be an advantage for them as well as for the men having intercourse with them, but in practice the carrying out of that proposal involved serious difficulties, since the beginners in prostitution were very young and almost always minors.

According to the data collected by Fournier syphilitic infection in prostitutes began early—i.e., it was first observed about the fourteenth year. Syphilitic infection afterwards showed a speedy increase in frequency among those girls, especially between their fifteenth and their seventeenth year, and attained its maximum in the eighteenth year. Being minors and ignorant, those young prostitutes enjoyed full liberty, without the slightest constraint being put upon them. How could one persuade them to submit to be vaccinated against syphilis? The conditions for such vaccination were very different in the cases of family syphilis, of such frequent occurrence amongst the rural population of Russia. Children who were in danger of acquiring syphilis from their relatives and who passed the disease on to other children might more easily be subjected to vaccination. They had not the liberty to do as they liked and must obey their parents, and the chances were that the parents might more easily be brought to understand the advantage of such measures. Vaccination with a virus so attenuated as to cause no secondary lesions would contribute materially to the lessening of the evil. The vaccine might be inoculated into those parts of the body which were least exposed to contact—e.g., the forearms. The possibility of the primary lesion causing infection would thus be reduced to a minimum, whilst the chances of contamination by a kiss or other dangerous contact with persons suffering from "plaques muqueuses" would be entirely removed.

Thanks to the facilities for studying that question by experiment on monkeys the solution of the problem of anti-syphilitic vaccination need no more be regarded in the light of an unrealisable and Utopian scheme. Central laboratories for the preparation of vaccines would have to be founded in which attenuated vaccines could be maintained by alternate passage through anthropoid apes and lower monkeys. The latter, after having been proved to be free from tuberculosis by the tuberculin test, would furnish the necessary vaccines. Before, however, that method could be realised in practice they had yet a long distance to traverse. In the face of the difficulties at present besetting the plan of vaccination against primary and secondary syphilitic lesions it was only natural to seek for some other means of prophylaxis against that terrible disease. It being a generally established fact that mercury was a sovereign remedy for syphilis Behrmann of Nürnberg six years ago suggested inunction of grey mercurial ointment as a preventive measure. Cohn of Berlin had suggested applying before the contact took place a salve made up of Ledermann's mercurial preparation and resorcin. After contact he advised washing with mercurial soap. To the same prophylactic end Guiard of Paris proposed washing with a solution of corrosive sublimate (1 in 4000 or 5000). He considered that if the prostitutes would but make use of that simple procedure syphilis would spread far less than it did at present. Guiard based his suggestion on the well-known therapeutic efficiency of mercury and its salts. In a long series of experiments carried out on chimpanzees, baboons, and macaci, mercurial inunction successfully prevented the outbreak of a primary lesion. The virus was inoculated either on the eyebrows or on the genital organs of the males and females. It was taken from a primary lesion in man and was thoroughly applied with a scarifier. The ointments employed were prepared either with metallic mercury or with calomel, white precipitate, or salicyl-arsenite of mercury. The substances were suspended in lanoline (1 in 3 or 1 in 4). Inunction was carried out for from four to five minutes and was begun between one and 20 hours after the inoculation. Even when applied 18½ hours after infection calomel salve still proved effective.

The conclusion from those experiments was that mercurial ointments might certainly be useful prophylactics against syphilis in all those cases where a contact had taken place. Instead of grey ointment, which caused much irritation in the skin and mucous membranes, the use of salves made up with non-irritating mercury salts should be recommended, such as calomel. The results obtained on lower monkeys and on anthropoid apes agreed so well as to justify the conclusion that the same method might also serve for the prevention of syphilis in man. Nevertheless, to make sure, they decided to try an experiment on a man. They inoculated at his own request a young medical student, who had almost completed his studies, with virus from the chancres of two syphilitic men. An hour after the parts inoculated were rubbed for five minutes with an ointment which contained in 3 parts 1 part of calomel. The young man, although certainly free from any former syphilitic taint, developed no primary lesion. Four macaci were treated with the same virus with which he was inoculated. Two of them, used as control animals, showed primary lesions 17 days later. A third macacus was rubbed with the calomel ointment an hour after inoculation of the virus and remained free from any syphilitic lesion, like the young man. The fourth macacus was rubbed with the ointment 20 hours after inoculation and showed a primary lesion after 39 days. That experiment, therefore, showed that man could with advantage employ mercurial ointments after every suspicious contact in order to preserve himself from syphilis. The study of that prophylactic method was not yet finished. Perhaps even a less prolonged inunction with ointments containing a lower percentage of mercurial salts might successfully prevent the development of the virus. There were not wanting persons who considered that every measure which might limit syphilis only served to encourage vice and that it would be better to let the disease spread freely. He did not discuss the morality of those who acquired that disease by sexual intercourse, but were not many victims absolutely innocent and had they not a right to be protected?

Persons who looked upon the prophylaxis of syphilis as immoral should apply the same reasoning to the use of antiseptics in midwifery because it facilitated criminal abortion. And if that paradox were carried through to the bitter end one might oppose not only the prophylaxis but also any treatment of syphilis, for men of genius, tainted with syphilis, had produced remarkable work, in the creation of which the cerebral excitement caused by the disease had doubtless played an important part. No considerations of a moralising tendency should retard the prevention of so disastrous a calamity as syphilis. True morality should rather contribute as much as possible to the prophylaxis of that and many another disease. Superannuated ideas, which had become firmly rooted, condemned the care one took of one's own health. One might care for others but it was wrong to take precautions for oneself. Ruined buildings and tattered clothing might appear more beautiful from an artist's point of view than complete houses and clean clothing, yet civilisation tended to replace the former by the latter. In questions of health morality should not attempt to lead hygiene but should rather follow her. Even in the religions of old hygienic precepts occupied an important place. With how much more reason ought not modern hygiene, having become an exact and infinitely more precise science than it was formerly, to reign supreme over all doctrines of morality.

THE GERMAN CONGRESS OF INTERNAL MEDICINE.[1]

THE Congress of Internal Medicine met this year at Munich from April 23rd to 26th, Professor STRÜMPELL (Leipsic) being in the chair. In his inaugural address the President made special mention of the deceased members, especially the late Professor Nothnagel of Vienna and Professor Rosenstein of Leyden, and then he delivered an interesting discourse on the present state of medical diagnosis and treatment. He said that the enormous number of journals devoted to practical medicine, of new medicinal compounds, of complicated therapeutical methods, and of sanatoriums might seem to imply that medical treatment had recently

[1] For this report we wish to tender our sincere thanks to the editor of the *Deutsche Medizinische Wochenschrift*, through whose courtesy it has been forwarded to us by our Berlin Correspondent.

undergone great development. But if the alleged success and the scientific importance of the therapeutical agents so highly recommended were considered it must be admitted that there has lately been a good deal of puffing in medicine. It is characteristic of the medical puffing of the present day that announcements of this description are dressed up in a quasi-scientific garb consisting of detailed chemical analyses, statistical tables, graphic curves, &c., although their scientific importance is no more than nominal. Professor Strümpell said that he did not wish to advocate a return to the therapeutical nihilism of former times, he only desired to draw attention to certain exaggerations and undesirable features in modern medical life. Professor Strümpell's address was listened to with great interest and the Congress then proceeded to the consideration of the subjects appointed for discussion.

Pathology of the Thyroid Gland.

Professor KRAUS (Berlin) said that the thyroid gland undoubtedly formed a secretion which entered the circulation but that the way by which this occurred had not yet been ascertained by histological research. Since the discovery of iodine in the thyroid gland by Professor Baumann two functions of the gland have been recognised—namely, the production (1) of substances necessary for the life of the organism; and (2) of antitoxins which prevented autointoxication. There are anatomical facts which are favourable to a double function of the gland. A reference was then made to the parathyroid glands of a peculiar structure discovered by Nicolas and Kohn, after which Professor Kraus said that experimental and clinical observations have shown that acute tetanus probably depended on the loss of the parathyroid glands. He then discussed the causes of the symptoms produced by the loss of the thyroid gland and said that the neuropathology of the tetanic convulsions was not known. Radiographic examination in cretins showed that the ossification of the bones was obviously slower than in normal individuals. The thyroid gland had a regulating action on the formation of bone. Among the diseases produced by a diminution of the function of the gland he mentioned myxœdema, infantile myxœdema, the myxœdema of adults, hypothyroidism (characterised by a backward condition of the growth and the physical development), and finally endemic cretinism.

Professor KOCHER (Berne) said that two forms of disease of the thyroid gland must be distinguished, these being respectively of thyro-atrophic and of thyrotoxic origin. The thyro-atrophic symptoms were the sequel of the partial or total loss of the function of the thyroid gland. The loss of the thyroid gland itself produced the condition known as cachexia thyropriva which was a chronic disturbance of the metabolism; the loss of the parathyroid gland produced a series of toxic symptoms constituting tetania parathyropriva. They together formed the group of hypothyroses to which belonged not only myxœdema and cretinism but also some undeveloped forms with local symptoms, such as disturbance of the genital functions, psychoses, and neuroses. For all these ailments the administration of thyroidin and of iodothyrin acted as a specific. If the symptoms were not too inveterate they disappeared under this treatment, but only so long as the administration of the remedies was continued. The pharmaceutical treatment was therefore only palliative, the radical method being the implantation of healthy glandular tissue. The thyrotoxic diseases were caused by hyperactivity of the gland. They ran either an acute or a chronic course, the former being characterised by toxic symptoms and the latter by the symptoms of a disease of metabolism. Medical men should learn to recognise the early symptoms, as in this stage recovery was possible under an adequate diet, avoiding substances which might irritate the gland. Milk diet, especially the use of goat's milk, was advisable, and phosphates were to be recommended. The radical treatment was a surgical operation consisting in ligature and excision according to the degree of hyperplasia. Patients whose entire gland was removed lived only seven years. After a partial removal of the gland cachexia was developed if the remainder underwent degeneration. Tetanus happened twice in a series of 40 cases of total excision. In Graves's disease recovery followed after an operation had brought the gland back to its normal size.—The discussion on these two papers was lengthy, as no fewer than 22 members spoke.

Professor NEUSSER (Vienna) pointed out that some relation must exist between the thyroid gland and the liver; he had seen cases of atrophy of the thyroid gland combined with atrophic cirrhosis of the liver showing symptoms of thyro-atrophic cachexia.

Professor MÜLLER (Munich) drew attention to the fact that patients suffering from Graves's disease very soon showed evidence of fatigue, both bodily and mental. He also alluded to the relation existing between Graves's disease and diabetes.

Dr. BLUMENTHAL (Berlin) gave some account of experiments which he had made on goats in which the thyroid gland was removed but the parathyroid glands were preserved. For two months after the operation the goats were unaffected but then their hair began to fall out, the secretion of milk ceased, and myxœdema developed.

Dr. GUTZMANN (Berlin) mentioned that disorders of vocal utterance sometimes occurred in myxœdema but disappeared under the use of thyroid compounds.

Cardiac Irregularities.

Professor HERING (Prague) read a paper in which he described five forms of cardiac irregularity—namely (1) pulsus irregularis respiratorius; (2) extra-systolic irregularity; (3) pulsus irregularis perpetuus; (4) disorders of innervation; and (5) pulsus alternans. The respiratory irregularity was pathological only when the respiration was superficial or ceased for some moments. It was a symptom of an increased irritability of the central nervous system. Extra-systolic irregularities might appear if a ventricular extra-systole occurred between two normal systoles without disturbing the normal rhythm or if a ventricular extra-systole caused an extra-systole of the auricle. They were no doubt caused by irritants of a mechanical nature. Extra-systolic contraction produced pulsus trigeminus, quadrigeminus, or tachycardia. Pulsus irregularis perpetuus was always combined with a venous pulse. Dissociation was a state in which the ventricles had a rhythmic contraction apart from the auricles. Pulsus alternans was certainly ventricular; it was a symptom of a certain cardiac debility. Dissociation and pulsus alternans were rather rare conditions.

In the discussion Dr. KIRCH (Marienbad) said that the arrhythmia in young and in neurasthenic subjects gave the best prognosis. It might occur after physical or mental overexertion and disappear with rest.

(To be continued.)

MEDICINE AND THE LAW.

The Home Office and the "Conscientious Objector."

THE Home Secretary has recently ordered a circular letter to be issued calling the attention of magistrates to the circumstances in which under Section 2 of the Vaccination Act, 1898, certificates of exemption are to be granted and to the manner in which they are often refused. The Act orders these to be given whenever the magistrates are satisfied that the applicant conscientiously believes that vaccination will be prejudicial to the health of the child in question. In addressing the grand jury at Birmingham in July, 1904, the Lord Chief Justice pointed out that two conditions have to be considered—namely, the "conscientious belief" and the belief "that vaccination would be prejudicial to the health of the child." The latter, he observed, would not be satisfied by a sort of general idea that vaccination was not good or that compulsory vaccination interfered with the rights of the subject and with the parent's control of his offspring—the parent's belief must be founded upon consideration of "the particular case of the child in point." The Home Office circular quotes Lord Alverstone's words and adds a few brief paragraphs amplifying them, pointing out that the Act does not require the belief to be well founded and also that it is not necessary to the proof of a conscientious objection that a certificate should be produced, or even that evidence should be given of any particular state of health of the child. It proceeds: "In order to satisfy themselves that the applicant's belief is conscientious the justices may think it desirable to ask him the origin and grounds of his opinion, but if that belief is genuinely entertained, any ignorance on medical or sanitary or statistical questions which he may display is no ground for the refusal of a certificate." The circular also adds that applicants who complain to the Home Office, as frequently happens, with

regard to the conduct of magistrates in this connexion often point to the fact that they have made long journeys to the court and have lost wages by so doing as evidence of the conscientious nature of their objection and the Home Secretary intimates that, though he does not wish to define the grounds on which magistrates should act, he is of opinion that such circumstances as those mentioned may reasonably be taken into consideration. The circular concludes with a hint that misapprehension of the meaning of the section may have caused the friction which has arisen under it and which it was intended to remove but that in the Home Secretary's opinion the state of things which now exists is likely to affect injuriously the general operation of the Act. Whatever views reasonable men may take as to the danger or absence of danger attending vaccination performed according to the methods now in use, the justice of the Home Secretary's views, and the soundness of the reasoning which underlies them are not hastily to be denied. The section in question, whether wisely inserted or not, was intended to remove friction in cases which would not have been so frequent but for the wide advertisement given to the power to obtain exemption by the frequent reports in newspapers of conflicts between magistrates and applicants. At the same time the general want of sympathy on the part of magistrates throughout the country with the applications of the "conscientious objector" has been due to a genuine desire to promote the public good and the medical profession has received zealous support from them in the effort to obtain universal and efficient vaccination.

Diseased Meat and the Wholesale Dealer.

A decision of some importance from the point of view of the public health was recently given by the Divisional Court in a case in which a sanitary inspector for the borough of Paddington was the appellant and a slaughter-house keeper was the respondent. The sanitary inspector found in a bunch of pigs' plucks hanging up on the premises of a pork-butcher in the Harrow-road one which was tuberculous and which he accordingly seized. It was the practice of the pork-butcher, and had been so for two years, to submit daily his purchases to the sanitary inspector and not to sell anything until he had passed it. In these circumstances the particular plucks among which the unsound one was found were clearly not being offered for sale, as they had not been inspected, so that no proceedings were taken against the pork-butcher, but a summons was taken out against a person said to have been the original purveyor of the meat, a slaughter-house keeper from whom it was alleged that the pork-butcher had bought it. The matter would have been simple enough so far as the law was concerned had the diseased pluck been proved to have been exposed for sale as human food, but as it had not been offered as such the prosecution was met by a decision (Reg. v. Dennis, 1894 Q.B. 458) which seemed to lay down that in these circumstances no offence was committed by the original vendor, and the magistrate had accordingly dismissed the case on those grounds without going further into the facts. The Lord Chief Justice was, however, able to distinguish the case referred to as one in which it was not clear that the stuff in question had been sold as human food and in which a jury had been wrongly directed upon that point and he delivered the judgment of the court to that effect, remitting the charge against the slaughter-house keeper to the magistrate in order that it might be tried out. The prosecution, it may be mentioned, was brought under Section 47 of the Public Health (London) Act, 1891, of which Subsection 1 provides for the inspection and seizure of articles intended for the food of man and exposed for sale, throwing upon the person charged with exposing it the burden of proving that it was not intended for human consumption. Subsection 2 provides for the summary conviction of the person exposing the food and Subsection 3 is as follows:—

> Where it is shown that any article liable to be seized under this section and found in the possession of any person was purchased by him from another person for the food of man, and when so purchased was in such a condition as to be liable to be seized and condemned under this section, the person who so sold the same shall be liable to the fine and imprisonment above mentioned unless he proves that at the time he sold the said article he did not know, and had no reason to believe, that it was in such condition.

Subsection 3 would certainly seem to have been intended to cover such facts as those alleged in the case described and it would be a matter for regret if a person could not be convicted under Subsection 3 unless another person could also be convicted under Subsection 2.

Prosecution by the Medical Defence Union.

On June 5th the Medical Defence Union prosecuted a person, giving the name of Le Grand N. Denslow, before Mr. Paul Taylor at Marylebone police court for using the titles of Doctor and of physician, and thereby implying that he was registered under the Medical Acts. Evidence of the assumption of the titles was given. Mr. Freke Palmer, for the defence, said that the defendant was an M.D. of New York and up to 1902 had had a large practice in that city and in Minnesota. Since that date he had devoted himself to working at the subject of locomotor ataxy. The defendant was fined £30 and 10 guineas costs. We may add that we cannot find the name of Le Grand N. Denslow in the Index of Physicians of the Standard Medical Directory of North America for 1903-04.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8601 births and 4176 deaths were registered during the week ending June 2nd. The annual rate of mortality in these towns, which had steadily declined in the six preceding weeks from 17·3 to 14·2 per 1000, further declined last week to 13·8 and was lower than in any previous week of this year. During the first nine weeks of the current quarter the death-rate in these towns averaged 15·8 per 1000; in London the average rate in the same period was 15·9, and in the 75 other large towns 15·8 per 1000. The lowest death-rates during last week in the 76 towns were 4·8 in Hornsey, 5·3 in Devonport, and 5·7 in Handsworth and in King's Norton; the rates in the other towns ranged upwards to 18·0 in Manchester and in Salford, 18·1 in Huddersfield, 18·6 in Bury, 19·8 in Stockton, and 19·9 in Stockport and in Swansea. The 4176 deaths in the 76 towns showed a further decline of 117 from the numbers returned in recent weeks and included 409 which were referred to the principal epidemic diseases, against 419 and 441 in the two preceding weeks; of these, 157 resulted from measles, 101 from whooping-cough, 56 from diarrhœa, 42 from scarlet fever, 39 from diphtheria, 14 from "fever" (principally enteric), and not one from small-pox. The deaths from these diseases were equal to an annual rate of 1·3 per 1000 in the 76 towns and to 1·4 in London. No death from any of these infectious diseases was registered last week in Nottingham, Sunderland, Walsall, York, Devonport, South Shields, or in ten other smaller towns, whereas they caused death-rates exceeding 3 per 1000 in Manchester, Salford, Huddersfield, and Aston Manor. The highest death-rates from measles occurred in Bournemouth, Tynemouth, Burnley, and Manchester; and from whooping-cough in Aston Manor, Coventry, Bootle, and Huddersfield; and from diarrhœa in Hull. Scarlet fever caused eight deaths in Sheffield, three in Liverpool, and two each in East Ham, Plymouth, Birmingham, and Birkenhead. Of the 39 deaths from diphtheria three occurred in West Ham, and two each in Walthamstow, Plymouth, Liverpool, Salford, Sheffield, and Newcastle-upon-Tyne. Five cases of small-pox were under treatment in the Metropolitan Asylums hospitals at the end of last week, no new case having been admitted during the week. The number of scarlet fever patients under treatment in these hospitals and in the London fever hospital on Saturday, June 2nd, was 2516, showing a further increase upon recent weekly numbers; the 213 new cases admitted during the week were 23 fewer than those in the previous week. The deaths referred in London to pneumonia and other diseases of the respiratory organs, which had declined in the six preceding weeks from 399 to 212, further fell last week to 186 and were 30 below the corrected average for the corresponding week in the four preceding years 1902-05. The causes of 45, or 1·1 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Norwich, Plymouth, Sunderland, Newcastle-upon-Tyne and in 43 other large towns. The proportion of uncertified deaths showed, however, an excess in Portsmouth, Leicester, Blackburn, Preston, Halifax, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal

Scotch towns, which had been equal to 18·8, 17·6, and 17·3 per 1000 in the three preceding weeks, rose again to 17·5 in the week ending June 2nd, and exceeded by 3·7 the mean rate during the same week in the 76 large English towns. The rates in the eight Scotch towns ranged from 15·1 in Perth and 15·2 in Dundee to 17·6 in Edinburgh, 18·2 in Glasgow, and 24·3 in Greenock. The 600 deaths in the eight towns exceeded by eight the number returned in the previous week, and included 22 which were referred to whooping-cough, 13 to measles, 13 to diarrhœa, six to diphtheria, five to "fever," four to scarlet fever, and not one to small-pox. In all, 63 deaths resulted from these principal infectious diseases, showing an increase of 18 upon the number in the previous week; they were equal to an annual rate of 1·8 per 1000, which was 0·5 above the mean rate during the week from the same diseases in the 76 English towns. The fatal cases of whooping-cough, which had declined in the four preceding weeks from 24 to 13, rose again last week to 22, and included 13 in Glasgow, three in Dundee, three in Aberdeen, and two in Greenock. The 13 deaths from measles showed an increase of one upon the number in the previous week; six occurred in Glasgow and four in Edinburgh. Of the 13 deaths referred to diarrhœa eight were returned in Glasgow and three in Edinburgh. All the four fatal cases of diphtheria occurred in Glasgow and two of the four of scarlet fever in Dundee. The five deaths referred to "fever" exceeded the number in any recent week and included three in Glasgow, of which one was a fatal case of cerebro-spinal fever. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 131 and 96 in the two previous weeks, further fell to 95 last week, but exceeded by seven the number in the corresponding week of last year. The causes of 27, or 4·5 per cent., of the deaths registered in the eight towns last week were not certified, the proportion of uncertified deaths in the 76 large English towns during the same week being only 1·1 per cent.

HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been 21·6 and 22·4 per 1000 in the two preceding weeks, declined to 20·2 in the week ending June 2nd, a lower rate than has prevailed in any previous week of the current quarter. During the first nine weeks of the current quarter the death-rate in the city averaged 23·0 per 1000, against 15·9 in London and 18·2 in Edinburgh. The 147 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 16 from the numbers returned in the previous week, and included seven which were referred to the principal infectious diseases, against two and six in the two preceding weeks. These seven deaths from the infectious diseases included three fatal cases of whooping-cough, two of measles, and two of diarrhœa, whereas no death was referred to small-pox, scarlet fever, diphtheria, or "fever"; the seven deaths were equal to an annual rate of 1·0 per 1000, the rate from the same diseases last week being 1·4 in London and 1·2 in Edinburgh. The 147 deaths in Dublin last week included 33 of infants under one year of age and 36 of persons aged upwards of 60 years; the deaths of infants showed a considerable increase upon recent weekly numbers, while those of elderly persons showed a decline. Four inquest cases and two deaths from violence were registered, and 58, or 39 per cent., of the deaths in the city were recorded in public institutions. The causes of 11, or 7·5 per cent., of the 147 deaths were not certified either by a registered medical practitioner or by a coroner, the proportion of uncertified deaths last week being but 0·2 in London and 5·1 in Edinburgh.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Henry LAWRENCE CROCKER has been placed on the Retired List at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Thomas H. Corkery retires on retired pay (dated June 6th, 1906).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel William Draper, V.D., having attained the prescribed limit of age, is removed from the Army Medical Reserve of Officers (dated June 6th, 1906).

Surgeon-Captain Robert E. Beveridge to be Surgeon-Major (dated May 26th, 1906); Surgeon-Major James W. T. Gilbert to be Surgeon-Lieutenant-Colonel (dated May 22nd, 1906); Surgeon-Captain Hamilton C. Reid to be Surgeon-Major (dated May 26th, 1906).

IMPERIAL YEOMANRY.

East Riding of Yorkshire: Robert Athelstan Draper (late Surgeon-Lieutenant, 1st East Riding of Yorkshire Royal Garrison Artillery (Volunteers), Surgeon-Lieutenant, Army Medical Reserve of Officers) to be Surgeon-Lieutenant (dated May 19th, 1906).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Lanarkshire: Surgeon-Captain A. K. Chalmers to be Surgeon-Major (dated June 2nd, 1906). 1st Shropshire and Staffordshire: Surgeon-Lieutenant G. Mackie to be Surgeon-Captain (dated June 2nd, 1906).

Royal Engineers (Volunteers): 1st Aberdeenshire: Frederick Philip to be Surgeon-Lieutenant (dated June 2nd, 1906).

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel George Massy, I.M.S. (retired), at his residence in Bath on May 14th, in his sixty-fifth year. He joined the Indian Medical Service in 1865 and retired in 1896.

A PORTABLE RATION FOR SOLDIERS IN BATTLE AND ON THE MARCH.

In the *Journal of the American Medical Association* of May 26th Dr. Louis L. Seaman has an article on this subject in which he states that no uniform standard can be made applicable to all armies or to all countries. Climate, season, custom, fixed tastes of different nationalities inherited through generations, distance from base of supplies, and cost of preparation are all factors that materially influence the selection of a portable ration and also indicate the impossibility of uniformity. He calls attention to the value of smoked beef and describes its method of preparation. He states that this meat will keep indefinitely, is easily digested and palatable, and may be eaten raw or cooked. At the same time it does not soon become distasteful like canned roast beef or corned beef, while its nutrient value is high as it contains 26·4 per cent. of protein and 6·9 per cent. of fat, and owing to the creasote with which it is impregnated it possesses antiseptic qualities which he considers of great value in a military diet. For the carbohydrate constituent of the ration he suggests a mixture of seven parts rice to three parts barley meal. The mixture of these two grains is a very good substitute for bread and lends itself particularly to the making of a palatable soup or stew. It should be cooked, dried, and ground; so prepared it keeps well, is easily transported, and can be quickly prepared by the individual soldier. It is especially proposed as a substitute for the hard bread which now forms such an important constituent of most military field rations. The portable ration should only be used when fresh meat, bread, and vegetables cannot be obtained. He states that portable water and soup kettles should form a part of a campaign outfit and speaks of the necessity of tea or coffee as an article in the soldier's rations. When drunk hot they maintain the bodily temperature and permit the use of food for purposes of energy which would otherwise be applied to the maintenance of bodily heat. Tea is, in Dr. Seaman's opinion, far preferable to coffee as a component of the military ration under consideration.

MILITARY HYGIENE.

An editorial article in the *Broad Arrow* closes with the following words: "We believe that the present Director-General of the Army Medical Department is taking measures to improve the physical efficiency of the army. But in these matters help must come from below. The men of the army, like the blue-jackets in the Royal Navy, should be required to observe personal cleanliness. The result of neglect of surface cleanliness in the soil of camp and quarters, that compare so badly with a ship's decks, whose surface is never sullied, should be constantly impressed on the soldier by his officers. Then in the next campaign on which he enters he, because forewarned, will be forearmed, against disease."

Correspondence.

"Audi alteram partem."

THE ALLEGED GROWTH OF INSANITY.

To the Editors of THE LANCET.

SIRS,—The fact that on Jan. 1st, 1905, the total number of notified insane in England and Wales stood to the estimated population in the proportion of 1 to 285 is in itself sufficiently important and interesting to merit close and careful consideration. Whether the country ought to regard this condition of things, where all is human, as matter for modest gratulation or for penitential self-reproach it is difficult to say off-hand. There are those, on the one hand, who are pleased that things are no worse and who are thankful that there are as many as 285 persons not "notified insane" to one person so notified, and there are, on the other hand, those who take a gloomy view of the situation, not because they are ratepayers but because they have persuaded themselves that the proportion of notified insane is excessive and blameworthy, not to say discreditable. To this latter category belongs assuredly a writer who, taking as his text the "Growth of Insanity," occupied several columns of the *Times* of April 14th and 21st with articles in large type dealing with his subject and serving up enlightenment to "the many estimable people who like to amuse themselves with hypotheses, while they close their minds firmly against unpleasant facts." The writer commences by giving, on a process of calculation peculiarly his own, 1 to 272 as the proportion of insane to population and not 1 to 285 as given by the Commissioners in Lunacy in their report; but this is a mere trifle in his way of stating "unpleasant facts," for he goes on to say, and this is the *raison d'être* of his lucubrations, that "in insanity we have a disease which has increased five-fold in the last 60 years during which the population has only doubled itself." After reminding us that "the effect of the mere sweeping up and incarceration of the harmless so-called 'naturals' of country villages was exhausted within a very few years of the passing of the Lunacy Acts of 1845," he goes out of his way to take, as the basis of his comparative statement, the number of the insane and the population in the year 1844, a date antecedent both to the passing of those Acts and to the influence of the "sweeping up" operations referred to. The writer has to this extent vitiated his case and has therefore, possibly unwittingly, done his subject an injustice. He has presented to the general public such an overdrawn, not to say startling, picture that I have taken the liberty of asking you, Sirs, to kindly afford me some space in THE LANCET to lay before your readers what appears to me to be the interpretation that should be put upon the most recent official evidence as to the numerical growth of insanity in England and Wales. Comparative statistics are ever a source of danger, even when expressed in the least complicated terms, but those given on this question by the Commissioners in Lunacy in their fifty-ninth report (1905) have at least the merit of being compiled without bias or prejudice upon as complete a scale as the nature of the circumstances permits. The last 35 years—i.e., from 1869 to 1904—may fairly be regarded as a period of uniformity with respect to the notification and registration of the insane in England and Wales and the figures given by the Commissioners are the only trustworthy ones. In their report they tell us that the total insane were 53,177 on Jan. 1st, 1869, and 119,829 on Jan. 1st, 1905, and they add that "in spite of this large numerical increase, it will be found that when considered in relation to the growth of population the proportion of insane has *not* increased as much as the population." The figures given for the 35 years ending with 1904 show that the rate of increase per cent. of the population was 53·6, while that of the ratio of insane to population was 46·6. With this definite expression of opinion on the part of those who are in the best position to know I am content to leave this aspect of the question.

Large as the actual increase in the total number unquestionably is, there can be no doubt that the segregation of the insane in asylums and the restrictions placed upon them, although somewhat costly, have been the means of checking the rate and the extent of the increase by so far preventing them from propagating their kind, the influence of heredity being admittedly one of the most consistent as well as one of the most potent factors in the causation of insanity. On the other hand, the conditions of asylum life are now so well ordered that they must to some extent be held responsible for furthering the asylum accumulation of the insane by obviating the tendency to death and by engendering in the convalescent inmates more contentment with their surroundings and less longing to be at large and to engage in the struggle for existence in the hurly-burly of life. Nor must it be left out of consideration that the domestic life of the poorer classes is not always well adapted to looking after weaklings from asylums and that the relatives, knowing how well housed and looked after they are, refrain from clamouring for their discharge. What is the meaning of the large numerical increase of the total insane? Referring again to the Blue-book of the Commissioners (1905) a chart is given representing the gradual growth of the ratios of insane to population from 1859 onwards and of the private and pauper class respectively. "The curves demonstrate clearly that whereas in the pauper class the proportion of insane to population has grown almost *pari passu* with the increase of total insanity in the population, there is no such parallelism in regard to private patients ..... This variation is the more striking when it is borne in mind that every year an increasing number of patients admitted as paupers are transferred to the private class, the transfers in the opposite direction showing no such increase." Taking the years 1859 to 1905, the ratio of the total insane per 10,000 of population rose steadily from 18·67 to 35·09 (not quite doubling itself), while that of the pauper patients rose with the same steadiness from 15·95 in 1859 to 32·0 in 1905 (as nearly as possible doubling itself) and that of private patients only rose (and with irregularity) from 2·38 to 2·8 (the highest point reached being 2·97 in 1879). In other words, while the proportion of pauper patients has doubled itself in the last 45 years that of the private patients has remained to all intents and purposes stationary, which, being interpreted, means that impecuniosity and straitened circumstances (the *res angusta domi*) must be held responsible for the numerical growth of insanity and that a large proportion of the insanity upon which the ratepayers so freely expend their money is a kind of insanity which has for its test or gauge not the mental condition but the pecuniary resources of the patient. From this kind of insanity the well-to-do can, as it were, purchase their discharge, while the impecunious have to remain in the asylum and on the notified list. In this way an explanation is afforded of the disproportion of the discharge-rate among private patients as compared with pauper patients, as also of the great difference between the ratios of increase in the two classes. This is a matter of such vital importance in any unprejudiced inquiry into the question of the growth of insanity that I give in full the clear statement of the Commissioners (Report for 1905) on the subject:—

"There is another reason than that of the admission-rate which largely explains the fact that private insane patients have not increased in like manner to the pauper insane, and that is the much higher proportion of those discharged annually from the private class. Of the total admissions during the decade (1895 to 1904) the discharges amongst private patients amounted to 78·1 per cent., or 43·9 recovered and 34·2 not recovered, these discharges being exclusive of transfers from place to place. Amongst pauper patients in the same period the total discharge-rate was 44·5 per cent., or 36·5 recovered and 8·0 not recovered. There must, therefore, be a far greater accumulation of the pauper insane than there is of those in the private class. There is, no doubt, sufficient reason for the marked discrepancy between the proportion of non-recoveries amongst the discharged cases in each class. That an insane patient should be discharged from an institution 'not recovered' must not be taken to imply any laxity of administration. No patient considered to be dangerous to himself or others would wittingly be so discharged, and the probability is that they are mostly of the harmless, feeble-minded type who, if paupers, would be unable to obtain their own living but who, if belonging to a better station of life, could be well looked after and cared for in their homes. Naturally a certain number of such discharged non recoverables again find their way back to institutions to form part of the 20 per cent. or so of the annual admissions who enter asylums not for the first time. The pauper whom it is not deemed

advisable to discharge so readily, seeing that he is far more likely to return, is retained in the asylum under control and there engages in useful work, which he can do under such conditions, yet is quite incapable of performing it under the strain and stress of earning a livelihood."

This retention and accumulation in asylums of pauper inmates who are "insane" only by force of circumstances, of persons whose insanity is potential rather than actual, are undoubtedly the cause of the growth in the number of the notified insane. Further, it is not too much to say that this numerical growth of insanity is preternatural in so far as it is due to external and adventitious, and not to pathological, conditions, a fact which may be taken to indicate that a considerable proportion of it is unreal and, in some sense, fallacious. From what has been said it will have been gathered that in relation to our inquiry the official list of insane persons under the cognisance of the Commissioners consists of two classes which are made up of three groups, thus:—

1. Private patients ... *a*. Private patients actually insane.
2. Pauper patients ... *b*. Pauper patients actually insane.
c. Pauper patients potentially insane.

For reasons which have been explained the private patient class shows no residuum of inmates potentially insane, such as is shown in group *c* of the pauper patient class. We have also learnt that it is only their impecuniosity and the force of external circumstances that prevent the pauper patient class from being discharged under given conditions leaving no residuum of potentially insane behind them, exactly in the same way as the private patient class are discharged under given conditions and leave no potentially insane behind them. This being so, it follows that the true and actual insanity of the pauper class is, for official and statistical purposes, the same as the true and actual insanity of the private class of patients. But it has been demonstrated that the proportion of private patients to the population has remained practically stationary throughout the last 45 years: and, the true and actual insanity in the two classes being essentially the same, the conclusion is forced upon us, first, that the proportion of true and actual insanity among pauper patients has remained practically stationary as it has among private patients; and secondly, that the numerical increase of the notified insane is due to the retention and accumulation in pauper asylums of inmates who are only potentially insane (and who if at large possibly could not be re-certified unless some change for the worse took place in their mental condition).

What then would be my answer to the question so often asked, "Is insanity on the increase?" I would say: "The official returns for England and Wales show that while the number of notified insane persons is largely on the increase the proportion of true and actual insanity remains practically stationary." Our asylums are swamped by the accumulation of chronic cases among whom the "potentially insane" group figures largely and the authorities are at their wits' end to know how most economically to dispose of these cases. The unconditional and haphazard discharge from asylums of impecunious persons who are potentially but not actually insane into our midst would not be justifiable as it would introduce into the community an abundant source of anxiety and danger and create a sense of uneasiness and apprehension in the public mind. Again, the right and proper detention of the "potentially insane" in asylums cannot be regarded by the ratepayers as an unmixed evil, as they do useful work in the fields, workshops, and wards, and thereby keep down the cost of maintenance by saving an enormous outlay on the labour which would otherwise have to be employed. Finally, the stationary condition of the true and actual insanity among the notified insane is a gratifying and satisfactory indication that the mental stability of the country is not materially deteriorating and that our national decadence is not so imminent as pessimistic prophets would have us believe.

It is not to be expected that asylum authorities should be in a hurry to part with those of their potentially insane patients who are good mechanics or useful workers, and it seems to me to be quite beyond the powers of the already overworked Commissioners to exercise a crucial scrutiny in the thousands of individual cases that crop up for responsible consideration in the matter of their discharge from the asylum. Is, then, this redundant accumulation to go on for ever? or are we to have more Commissioners? or is the Royal Commission on the Feeble-minded going to solve the problem by recommending the formation of labour colonies with the kind of work and supervision that would just suit the potentially insane inmates of asylums and enable them to be discharged with safety and utility?

I am well aware, Sirs, that this question of the growth of insanity is a problem involving subsidiary issues and points of minor influence, but these I have not dwelt upon in order to avoid complicating details which would only tend to obscure the general argument without altering the main conclusions to which this inquiry has led up—namely, that if the discharge of "pauper" patients could be brought to pass precisely as the discharge of "private" patients is effected there would be left in asylums only the "actually insane" group in each class and there would be no retention and accumulation of the "potentially insane" and therefore no such numerical increase of the "notified insane" as the official returns show. The inquiry appears to me, further, to have emphasised the fact that however necessary, and even unavoidable, for official and statistical purposes the crude division of the insane into private and pauper patients may be there is no distinctive clinical or pathological difference in the insanity occurring in the two classes.

Can nothing be done to equalise the conditions of discharge in the two classes and to help the impecunious to help themselves on convalescence and recovery? The boarding-out system which has answered so well in Scotland does not appeal successfully to English householders, but if the excellent work of the After-Care Association, which for want of funds is only as a drop in the bucket at present, could be developed a thousandfold some appreciable good might be done in this direction. There is no reason why every county should not have its After-Care Association and thus actively participate in the good work of helping those who are handicapped in the struggle for existence on being discharged from the asylum. Again, I have always found the Salvation Army most ready to give their efficient aid in this direction and it is a pity that more advantage is not taken of the services of an organisation which is not only willing but able to supply the work and the supervision that are needful at a time when a helping hand is all that is required to secure beneficial and gratifying results in individual cases.

Apologising for the length of this letter,

I am, Sirs, yours faithfully,

DAVID NICOLSON, M.D. Aberd.,
Lord Chancellor's Visitor in Lunacy.

Royal Courts of Justice, June 5th, 1906.

THE VALUE OF A SERUM (DOYEN'S) IN CASES OF MALIGNANT DISEASE.

To the Editors of THE LANCET.

SIRS,—It is with regret that we find it necessary to reply to Dr. Doyen's letter which appears in THE LANCET of May 26th, p. 1496, wherein he comments on a paper read by us before the Royal Medical and Chirurgical Society on March 27th, and published in THE LANCET of April 7th.

Dr. Doyen first of all complains that we have not reported on cases seen by us at his clinique and says that we "ought to have drawn up a report on these patients—viz., on the results of my method of treatment as carried out in my hospital and under my direction." With regard to the cases seen by us (together with Mr. Charles Ryall) at Dr. Doyen's clinique at Paris, we should like to state that a report was issued and presented to the governing body of the Cancer Hospital. At our first visit in March, 1905, we saw 40 cases; at our second visit in May, 1905, we saw 17 of these 40 cases; and at our third visit at the end of June, 1905, we were shown only eight cases which had been presented to us on our previous visits. Our report, then, could only deal with those cases which had been seen more than once, and these were 17 in number, of which eight only were seen on the three occasions. Our comments on these 17 cases were as follows:—

Of the cases seen at Paris there was "apparent" improvement in three—viz., L——, H——, and V——, and in one (P——) the growth was definitely smaller.

L——. In this case what was thought to be a recurrent growth in the groin was found to be an inflammatory condition due to a buried stitch.

H——. Here, although the small local nodules had sloughed after interstitial injections into them, the patient's general condition was worse, in that she had lost a good deal of flesh and her features were pinched.

V——. In this case inflammation had disappeared in one fold of the scar and cicatrisation had followed. It is well known that such changes occur without the use of serum. The patient's age was 59.

P——. The main feature in this case was the shrinkage of the tumour. How far one is able to attribute this to the serum which was given and how far to a natural process it is difficult to say, but it is well known that cancer of the breast in women of this age (47) often undergoes shrinkage apart from the use of a serum.

In the remaining cases (13 in number) the disease was not beneficially influenced by the use of the serum.

In conclusion, the evidence brought forward by Dr. Doyen is, in our opinion, not sufficiently definite to enable us to state that the serum had any permanent beneficial action in cases of malignant disease and this is supported by the results of the clinical study of the therapeutic action of the serum used at this hospital.

(Signed) CHARLES RYALL.
ALEXANDER PAINE.
DAVID J. MORGAN.

You will observe that our opinion of the results of Dr. Doyen's method of treatment as carried out in his own hospital and under his own direction coincides with our opinion of the results of Dr. Doyen's method of treatment as carried out by us at the Cancer Hospital. We abandoned this treatment at the Cancer Hospital on June 19th, 1905. A month later a report was issued by the Special Commission appointed by the Société de Chirurgie and composed of MM. Berger, Monod, Nélaton, and Delbet, to study in Dr. Doyen's clinique the effects obtained in the treatment of different forms of cancer by the serum treatment described by Dr. Doyen. The cases were both selected and treated by Dr. Doyen himself at his own hospital. The following are the conclusions of the report of this commission :—

The commission examined 26 patients suffering from cancer or from recurrence of cancer of various organs. Ten of these cases were treated by serum alone without operation, and the results were stated as follows: stationary condition, 1 case; no amelioration, grave condition persistent, 2 cases; aggravation, 6 cases; rapid aggravation and death, 1 case. Finally, the report states: "Let one eliminate everything one wishes to from the statistics which we have brought to your knowledge, there none the less remains this fundamental fact that during the five months in which we have examined all the cases which M. Doyen has wished to show us, we have not seen a single amelioration. Further, it seems to us that M. Doyen has been the victim of illusions which so easily carry away inventors who confound their hopes with the reality."

Dr. Doyen further states:

I then sent them information that I could in no way accept a report of this kind, and that I could not take any responsibility for the treatment of patients whom I had not examined myself and in whose cases I could not determine myself the dose and the interval of the injections.

We have received no such statement from Dr. Doyen, and we would remind him that he visited the Cancer Hospital, that he there personally examined five out of the nine of our cases, and that he expressed his approval both of the suitability of the cases for his treatment and of the manner in which the treatment was being carried out.

Dr. Doyen further states that "cases showing negative results do not prove anything." Our reply is that we have seen neither at Paris nor London any positive evidence of the beneficial action of his serum in cases of cancer, but that in our negative results of "the value of a serum (Doyen's) in cases of malignant disease" we have produced positive evidence that the use of the serum was attended with grave constitutional danger in several of the cases and that it had to be abandoned.

Clinical Investigation.

As Dr. Doyen's criticisms may give rise to erroneous impressions that the injections were given indiscriminately, it may be well for us to show in detail that we have strictly adhered to his method of giving the injections. Dr. Doyen recommends that :—

First week	The first injection (of serum) should be given on the first day. The second injection (of serum) should be given on the third day. The third injection (vaccine) should be given on the fifth day.
Second week	The fourth injection (vaccine) should be given on the eighth day. The fifth injection (vaccine) should be given on the eleventh day.
Third week	Repeat as in first week.
Fourth week	Repeat as in second week, and so on.

In Case 8, as Dr. Doyen states, four injections were made in eight days. Reference to the above table shows that the fourth injection should be given on the eighth day. We would remind Dr. Doyen that this is not the same thing as "one injection every other day." In Case 4 five injections were given in 12 days, which is correct according to Dr. Doyen's table. In Case 9, where the duration of the treatment was 15 days, six injections were given, again agreeing with the table. In Case 3, here, by an oversight, June 8th should have read May 8th. This would give an interval of 38 days. The eighth injection, according to the table, should have been given on the nineteenth day, but the condition of the patient was such that the treatment had to be temporarily suspended. In Case 7, here Dr. Doyen is in error. He has misread our paper. The dates in our paper are from May 30th to June 19th—viz., 20 days, and not from May 20th to June 19th as he states. The table shows that the eighth injection should be given on the nineteenth day. In Case 2 the date here should have been June 26th and not June 22nd. This makes 12 injections in 31 days, agreeing with the table. Case 1.—15 injections were given in 41 days, agreeing with the table. Case 6.—16 injections were given in 47 days. The treatment here had to be suspended for four days. Case 5.—17 injections were given in 53 days. Here again the treatment had to be suspended, owing to the patient's condition, for eight days.

It will thus be seen that, allowing for the condition of the patients, the injections were carried out at the intervals expressly set down by Dr. Doyen. Further, as we have shown above, our results are identical with those which were obtained by Dr. Doyen himself and which were reported upon by the commission appointed by the Société de Chirurgie of Paris.

Experimental Investigation.

As regards this portion of our work, Dr. Doyen states that—

The results obtained by cultures from tumours equally prove that these experiments have been carried on under unfavourable conditions ..... and it is evident that the method employed has been defective. Cultures of the micrococcus neoformans are sometimes very difficult to obtain; the large number of negative results mentioned in the memoir of the Cancer Hospital proves that these cultures have not been sown under the necessary conditions.

In reply, we would state that we have never had the slightest difficulty in isolating the micrococcus neoformans from the various growths when the organism has been present. Further, we have found that it does not require any special medium for its isolation. As we stated in our paper it grows quite as well on all ordinary media as in Dr. Doyen's "bouillon de mamelle de vache," and in our opinion the use of the latter medium is quite unnecessary for the isolation of the organism. With regard to the animal experiments, Dr. Doyen states :—

I find myself obliged to form the same conclusion that these inoculations have not been made with virulent cultures.

Here we would remind Dr. Doyen that half the inoculations were made with two virulent cultures obtained by him from two distinct cases, and supplied to us by Dr. Doyen himself, and the other half with two separate cultures isolated by ourselves from malignant cases. The results in both cases were identical and negative as regards the production of neoplasms but positive as regards inflammatory reactions. That the organisms used were virulent was shown by the fact that in a large number of cases the animal died as the result of the inoculation.

In conclusion, we sincerely regret the absence of Dr. Doyen when our paper was read before the Royal Medical and Chirurgical Society as the misunderstandings which have thus arisen might have been avoided.

We are, Sirs, yours faithfully,

ALEXANDER PAINE,
DAVID J. MORGAN.

The Cancer Hospital, London, May 28th, 1906.

ANTERIOR OR POSTERIOR GASTRO-JEJUNOSTOMY.

To the Editors of THE LANCET.

SIRS,—The discussion between Mr H. J. Paterson and myself upon the relative merits of anterior and posterior gastro-enterostomy has elicited, I think, the chief of the arguments which may be offered by the advocates of each method. I desire only very briefly to refer to a few points which Mr. Paterson mentions in his last letter. Mr. Paterson repeats that the no-loop posterior operation is "mechanically incorrect," and in reply to my statement that "all the evidence that exists shows that it alone among all methods is the one which is free from mechanical

complication" quotes Dr. W. J. Mayo and Mr. E. Ward. The value of Dr. Mayo's opinion upon a matter such as this cannot be exaggerated. But I could not quote it or take it into account, for when my letter appeared it had not been published. But Dr. Mayo himself attributed the ill result in his two cases to "faulty technique" and to avoid a recurrence of such complications he has modified his operation but it still remains a posterior no-loop operation.

So far as the question of internal strangulation is concerned I pointed out that in all the cases which had afforded any evidence the meso-colic opening had been found securely closed and hernia had therefore not occurred. Mr. Paterson says the evidence is "valid so far as it goes," but that "it is incomplete." Quite so; but incompleteness is a necessary quality of almost all the evidence relative to all surgical procedures. Surgeons do not work in lasting material but this is no reason why we should hesitate to express an opinion upon the experience which is at our disposal. Mr. Paterson does not appreciate my argument as to the "water-logging" of the jejunum. He offered me an analogy which was clearly inapplicable and I suggested a better one to him—that of an intestine otherwise healthy fixed by an adhesion or a diverticulum and becoming obstructed because of the distension of the proximal limb. Mr. Paterson accepts this analogy and says: "Surely when water-logging occurs in such cases it is secondary to mechanical obstruction." I think not. A diverticulum exists from birth, an adhesion for years, and obstruction comes acutely. Why? I expressed the belief that distension of the gut might bring about obstruction and in this I am merely quoting the opinion of the greatest living authority upon such matters.[1]

Mr. Paterson's explanation of the relief of regurgitant vomiting by entero-anastomosis is certainly "simple" as he claims but it is not in accordance with the facts. He says: "After entero-anastomosis the loop is drained by the new opening and the stomach contents can readily escape through the *afferent* opening into the proximal limb and thence through the entero-anastomotic opening into the efferent jejunal limb." But in one case where an entero-anastomosis had been performed a peptic jejunal ulcer developed in the *efferent* limb showing that this was open to the passage of stomach contents. The explanation in this, and probably in the majority of cases, is, I maintain, that the loop becomes water-logged because of its abnormal fixation, kinking results, the water-logging is relieved by the entero-anastomosis, and the openings afferent and efferent again become patent. So I take leave of my friend Mr. Paterson who has, I think all will agree, stated his arguments throughout with conspicuous ability and moderation.

What am I to say to Mr. Ward? I confess that at first I was not a little disconcerted by his reply to me in THE LANCET of May 26th, p. 1498. I have been so long used to the scrupulous courtesy of Mr. Paterson as an adversary in debate that the vehement onslaught of Mr. Ward, with its manifold personal attack, found me unprepared and created an atmosphere to which I had been happily unaccustomed. For polemics of the kind Mr. Ward adopts I frankly admit I have neither aptitude nor liking. It is, I regret to find, a deplorable but seemingly inevitable result in a discussion upon matters of priority in surgical procedure that one of the disputants lapses early into irrelevancies of a personal character. Mr. Ward reminds me of our long association. It is that which would make any thought of reply to this kind of attack absolutely abhorrent to me, though perhaps I may never again encounter so vulnerable an opponent.

In his first letter Mr. Ward put forward a claim for Mr. Littlewood in two features of the operation of intestinal anastomosis, "the use of rubber-sheathed Doyen's clamps" and "the excision of an ellipse of mucous membrane from each viscus." I was able to show beyond the possibility of dispute that the first part of this claim was asserted not only in defiance of dates but that it was opposed to any the slightest knowledge of the literature and that it was refuted by the words Mr. Littlewood himself had used. Mr. Ward now substitutes a modified claim to a "special application of the clamps." Such a claim is bereft of that "authorship" upon which Mr. Ward insisted and even in this mutilated form it is quite untenable. For Doyen used, and depicted the use of, the clamps in the operation of gastro-enterostomy to fulfil the special objects Mr. Ward enumerated. Did it ever occur to Mr. Ward to ask for what the clamps were invented, if not for the very purposes he has named? The truth is that this claim has not in its original or in its modified, or indeed in any, form the slightest foundation.

In the matter of excision of the mucosa I am happy to have elicited after six years a date for the supposed origin of this. But I protest that in accompanying this announcement with a fantastic embroidery of insinuation and with such astonishing inferences Mr. Ward reaches the bounds of courteous discussion. The method he has thought proper to adopt in giving his evidence is that best calculated to discredit it. I therefore obtained, by Mr. Littlewood's kindness, permission to see the infirmary record in his possession with an interesting result. Mr. Ward has given a wrong date. It cannot surely be that memory so recently refreshed has failed him whose comments upon such a possibility in another are so graceful! Yet Mr. Ward expressly said he had obtained "the precise date." Of what account now are the impressions of years ago when the facts of yesterday are incorrect? I find further that Mr. Littlewood in the case referred to only removed a piece of mucosa from the stomach; it is plainly stated that no mucosa was removed from the jejunum. Mr. Ward wrote in his claim "the excision of an ellipse of mucous membrane *from each viscus*." Such a procedure it is now clear was first performed by myself, and I owe the suggestion, as I said, to the principle of the Murphy button, which "stamps out" a piece from each organ.

I am told again by Mr. Ward that the method Mr. Littlewood described, combining the use of clamps and the excision of the mucosa, is essentially the operation to which Dr. W. J. Mayo gives the name of the Moynihan operation. Vain repetition is not argument. Even if the claim to priority Mr. Ward asserts could be established, which it cannot, it would make no difference to my answer to this point. The two operations are dissimilar in every essential point but one, the excision of the mucosa. Of that everyone who will read the two descriptions will be convinced. If I have failed to make this clear, then though my sound has gone out into all lands my words have not reached the ear or appealed to the intelligence of my neighbour. Claims to priority in operative procedure are of all things the most paltry with which the pages of surgical literature are encumbered. Mr. Ward broke in upon Mr. Paterson and myself with the statement that in our discussion "a piece of epoch-marking work was in danger of losing its identity" when not one word had been written by either of us to justify such a remark. I was called upon to support the claim that was then made and Mr. Ward would not be denied. I have accordingly been compelled, with the greatest reluctance, to state the facts.

I am, Sirs, yours faithfully,

June 2nd, 1906. B. G. A. MOYNIHAN.

[1] Treves: Intestinal Obstruction, p. 78.

TRAINED MEDICAL RESERVES FOR WAR.

To the Editors of THE LANCET.

SIRS,—In a few weeks it will be 25 years since I raised in your columns, in 1881, the general question of medical reserves for our army in war-time by advocating the training of medical students in ambulance work according to army methods. The Royal Army Medical Corps Volunteers have practically grown up out of the suggestions then put forward but a trustworthy reserve of medical men for war is still unrealised. And why? Because no definite attempt has been made by the War Office to organise the student body while students, so that at the end of their studentship and when fully qualified they might automatically form the basis of a true medical reserve of specialised young medical men ready to help the regular medical service effectively in war.

It was, of course, necessary when first preaching the Red Cross crusade which led to the formation of the Royal Army Medical Corps Volunteers to speak specially to the medical schools and their students, because they were the only organised bodies to whom such addresses could be given, but it was never my aim to allow these students to remain intermingled with the ordinary Royal Army Medical Corps lay volunteers, and to elucidate this idea in 1884 I published a special pamphlet on the "Cadet Companies," which it was always my aim to form *of students only*. I was in those days medical officer of the Royal Military Academy at Woolwich and was anxious to copy its organisation, so far as was possible, on a volunteer organisation. Had any real effort been made to form a trustworthy reserve the student body could not have been overlooked for special consideration as

they practically have been. For I call it "overlooking" if that most valuable potential asset, a trained medical student, is treated by the State exactly as if he was an ordinary volunteer private so far as capitation allowance and boons and training are concerned. It seems too ridiculous that the State should be unable to perceive that the trained medical student is well worth a high capitation and very special treatment as regards training facilities in view of his future usefulness in war when qualified.

So long as the student is merged in a corps of ordinary volunteer laymen it is impossible to give him special terms and special training; hence it is essential that special student corps be formed with special grants, special officers, special training, and special advantages both while students and after receiving diplomas.

I now, after 25 years, again say in your pages that the true basis of a war reserve is to be found in giving special training to the students and in addition giving them distinct boons if they so train. What then do I suggest? 1. That the senior medical students be entirely removed from the ordinary Royal Army Medical Corps Volunteers and formed into one cadet battalion Royal Army Medical Corps for the three kingdoms, with companies in certain cities? 2. That the student be put to no expense whatever if he joins such a corps. That a capitation grant, full and ample, be given him quite beyond the grant given to the ordinary lay volunteer. Mr. Brodrick, when Minister of War, assured me himself that he thought a £5 a year capitation quite a moderate one for so valuable a person as a potential doctor. 3. That a special adjutant and instructors be allowed the cadet battalion. That a special paid commandant from the Royal Army Medical Corps be appointed to it. 4. That in addition to drills and lectures 14 days' field training in three consecutive years be given the students with pay as for the regular army and all expenses of food and transport be paid by the State for the training period in camp. That the uniform be made so similar to Royal Army Medical Corps officers that with a little addition of badges, &c., the student could wear it when he gets his diploma as a volunteer reserve officer. That special prizes be given by the State to the corps of cadets for efficiency. That in competing for commissions in the Royal Army Medical Corps certain marks be given for efficiency gained in the school companies so that physically fit and mentally active men may join the Royal Army Medical Corps as officers of the regular service. That "under officers" as at the Royal Military Academy at Woolwich be chosen out of the students and be specially compensated for efficiency. That special equipment be given such a company for practice and training. That special facilities to learn to ride be given them. That only physically fit men up to the physical army standards be so trained. That the number be limited and the more senior students be chosen rather than the junior. That expulsion be possible for grave neglects or misdemeanours. That the total number be so framed as to provide for possible army and navy wants in the regular services and a suitable reserve for both services. That in accepting students into the Cadet Battalion, Royal Army Medical Corps, only men who have passed the first half of their professional examinations be accepted. That the recommendations of their teachers be an element in the choice of candidates. That if a student is willing he can go through the 42 days' field training "off the reel" and be set free from further training on passing an examination in the course. That the cadet company allotted to Ireland be treated as a militia company as there are no volunteers in Ireland. That the corps be in number about 300, 150 being in London, 50 in Dublin, and 50 in Edinburgh, and sections in the smaller centres of medical education, but all to assemble annually for drill and at a fixed centre like Aldershot in the Long Vacation. That students in the Cadet Battalion who have passed their examination in the military subjects should on getting their diplomas be *de facto* commissioned in a medical reserve for war for three years, the military subjects to be military hygiene, hospital organisation, drill and discipline of the Royal Army Medical Corps, and army regulations and riding. That it be considered all such cadets should have the status of non-commissioned officers or warrant officers while under training and not that of private volunteers so as to receive a fuller pay rate in camp.

These suggestions endeavour to use our volunteer and militia regulations to specialise the students of medicine at an earlier date for military work and so to prepare for any grave national emergency that may overtake the Empire. All subscriptions from private sources or private volunteers should be unnecessary and the State should provide the total charges, the State to provide headquarters, which should be at or near a military hospital.

I am, Sirs, yours faithfully,

GEORGE EVATT,
Surgeon-General, late A.M.S.

London, June 2nd, 1906.

REFORM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—I feel sure that you will allow me to express my amazement at the interpretation which Mr. Tweedy has thought fit to place upon my letter. I should no more think of accusing the College Council of offering a bribe than of accepting one, and I emphatically deny that either explicitly or implicitly I made any such suggestion. To ask a man to dinner is not bribery; during a Parliamentary election it may possibly be "treating," but at ordinary times it is what I said it was, "keeping on the right side" of him. I venture to submit that Mr. Tweedy's indignation is a little overdone. He knows the constitutional history of the College probably better than any man living; he therefore knows that again and again in the past the efforts of reformers have been thwarted by the influence—possibly the legitimate influence—of members of the Council with the powers that be—viz., the Government of the day. Would it be so very extraordinary if this influence were once more exercised? Mr. Tweedy has, in his well-known pamphlet, quoted with approval the dictum of THE LANCET that the Charter of 1843, which still determines the constitution of the College, was—like that of 1800—"obtained by misrepresentation and fraud." He is not therefore surprised at the agitation among the Members for restitution of their ancient rights, which he describes in the same pamphlet as a "late manifestation of an abiding resentment."

This resentment has been intensified by the action of the Council, which has treated the Members' proposals with contemptuous indifference, returning the same stereotyped reply year after year. Is it therefore to be wondered at that some such proposal as a professional boycott should have been made, since the Members are in all College matters systematically boycotted by the Council? No one will be more distressed than I should things reach such a pitch and although the proposal has been urged upon us for years we have never before publicly referred to it. As to whether it be more "immoral" than the present attitude of the Council towards the Members' claims opinions will, no doubt, differ, but if adopted it would prove to be anything but "ridiculous." If the Council measure the interest taken in this question by the attendance at the annual meetings they are making a very serious mistake.

I am, Sirs, yours faithfully,

W. G. DICKINSON.

June 4th, 1906.

THE TREATMENT OF ASCITES.

To the Editors of THE LANCET.

SIRS,—I have read an account of a case of ascites, which was tapped 69 times, reported by Mr. Frederick H. Maberly in THE LANCET of April 21st, p. 1108. The case is interesting and instructive when the amount of fluid which must have been removed during the repeated tappings is considered. I am deeply interested in the mention of a belt used by the patient and would like some further information on this point. I have on several occasions seen cases treated by Dr. Alexander Morison where the re-accumulation of the fluid has been prevented by the use of plaster strapping applied after the tapping of the ascitic fluid. I have been struck by the great value of the simple and apparently overlooked procedure in the treatment of ascites.

In one patient who was under my care suffering from tuberculous peritonitis with a large accumulation of fluid the above line of treatment was carried out without the preliminary tapping and the support given by the repeated strapping did away with the necessity for tapping. The patient made a good recovery and two years afterwards was reported as being quite well.

A second case was that of a woman, aged 45 years, the subject of alcoholic cirrhosis of the liver with ascites. She made

excellent progress when treated by a preliminary tapping and plaster strapping over the entire abdomen but it was found impossible to continue the strapping on account of the irritation produced on the skin of the abdomen. In this case I used an abdominal belt with a rigid anterior surface, under which I placed a large indiarubber pad internally; the pad occupied the whole surface of the belt, it had a small stop-cock attached, through which air could be pumped at pleasure. The internal pressure of the pad could be increased or diminished at will. The patient made a good recovery and up to the present date (one year after treatment ceased) has had no recurrence of ascites and is in good health. No improvement took place in the patient's condition until the pressure was applied; indeed, up to the time when it was commenced the fluid had been gradually accumulating and the patient was just on the point of being tapped for the second time when the pressure was applied. The immediate effect of the application of pressure was a gradual and steady increase of the daily output of urine and a steady diminution in the quantity of fluid in the abdominal cavity. When she was last seen there was no fluid to be detected in the abdomen.

I trust you will pardon the narration of this case at such length but I think it well to quote this method of treatment which, in Dr. Morison's hands, has met with such marked success.

In Mr. Maberly's case the use of the belt does not appear to have reduced the quantity of fluid, but I note he quotes its use as being a support of the abdominal walls and possibly the pressure employed may not have been sufficient to have increased the intra-abdominal pressure, a very important point in the treatment of all cases of ascites where the object of the use of any form of abdominal pressure should be to promote the absorption of fluid by giving the lymphatic system the help it so greatly needs in the disposal of the excessive accumulation of fluid.

I am, Sirs, yours faithfully,

Highgate, June 1st, 1906. ROBERT KNOX, M.D. Edin.

PROPOSED AMALGAMATION OF THE LONDON MEDICAL SOCIETIES: A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—Referring to the letter which appeared in your issue of March 17th, p. 789, I wish to say with regard to Mr. Goodsall's statement that, although I have no definite recollection of my conversation with him, he has recalled the circumstances of his visit to me, and I have no doubt that I expressed the opinion that the building was good for at least another 50 years. Mr. Goodsall was evidently under the impression at that time that I was engaged professionally upon the structural alterations when the Royal Medical and Chirurgical Society took possession. This, however, was not so. Now that I have examined the structure I have no hesitation in stating that it is thoroughly sound and should last as long as any other erection of its age and class in London. I am, Sirs, yours faithfully,

Hanover-square, London, W., June 1st, 1906. JOHN BELCHER.

MEDICINE IN THE SOUDAN.

To the Editors of THE LANCET.

SIRS,—The vast expanse of territory known as the Soudan can only be regarded as in its infancy. The population a few years ago was variously estimated at from 8,500,000 to 15,000,000, but owing to the disastrous Dervish rule under the Mahdi and his successor it is at present believed to be less than 2,000,000. There is every reason, however, to hope for a rapid improvement in this respect, one of the most encouraging points being the very large proportion of young children to be met with in most of the provinces. In Dongola the number of children under nine years of age is estimated at 43,000, or 32 per cent. of the total inhabitants. Under the head of public health in Lord Cromer's last report, which you have already reviewed, it is stated that the campaign against malaria is being continued throughout the country. Vaccination is being vigorously pushed, at least 50,000 individuals having being vaccinated last year against 12,000 in 1904 and about 7000 in 1903.

Dr. J. B. Christopherson, the head of the civil medical department, writes hopefully about the public health in Lord Cromer's report: "It is possible," he says, "to strike a cheerful chord this year. The Soudan is not the fever-stricken, small-pox ravaged country into which the Egyptian diseases (ophthalmia, bilharzia, and anchylostoma), are rapidly being introduced, while sleeping sickness is advancing, cholera and plague threatening Port Soudan, and leprosy creeping in from the West. What are the facts? There are five provinces at least which are practically free from the malaria infection—fever cannot originate there—namely, Halfa, Dongola, Berber, Khartoum, and Suakin; and, with the introduction of suitable dwellings and energetic mosquito brigades, other provinces will be freed from malaria. Small-pox shows itself occasionally, but if the country can be vaccinated throughout small-pox will disappear. Great advances towards this end have been made during the last year or two. The carrier of sleeping sickness has been caught in Soudan territory, it is true, but so far not a single case of sleeping sickness has been imported. Quarantine regulations have been instituted for Port Soudan and for the Soudan generally; and the arrangements at Halfa have been so far successful that plague and cholera have been kept out. Egyptian ophthalmia is decidedly uncommon, and bilharzia and anchylostoma, the two principal Egyptian diseases, have not taken hold of the natives to any extent. Lastly, the natives are amenable to medical treatment, so that there is little difficulty in carrying out measures for the security of the country against epidemics so far as active opposition from the people is concerned." "It is satisfactory," adds Lord Cromer, "to know that the natives of the country are gradually gaining confidence in the hospitals. A native correspondent recently wrote to the *Soudan Times* in the following terms: 'A few years back the arrival of a medical officer in a village meant a general alarm; everybody sought a hiding place. Now, things have changed in such a manner that native patients flock to the hospitals to be treated.'"

The passages which I have quoted seem to me to bear striking testimony to the fact that scientific medicine will form one of the strongest bonds of international union in the future. I am, Sirs, yours faithfully,

May 25th, 1906. A TRAVELLER.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University Library and the Medical Institute.

THE University library contains a very valuable selection of books and periodicals dealing with scientific subjects associated with medicine—that is, with anatomy, physiology, and pathology, but these have not hitherto been at the disposal of the practitioners of the city and neighbourhood except by special permission. On the other hand, the library of the Medical Institute is well provided with current medical literature which could only be consulted by members of the University staff, who were not members of the institute, after application to the authorities of the institute. The periodicals and the books possessed by the University and the institute are complementary to each other and now and then occasions arise when the members of one institution desire to consult the books or periodicals possessed by the other. Permission for such consultation has never been denied, so far as I am aware, but delay may occur in obtaining it. Therefore, it was suggested that the libraries of the two institutions should be open to the members of both on condition that each member using the library of the institution to which he does not belong shall sign his name and address in a book kept for the purpose. This suggestion was put in a concrete form at a meeting of representatives of both institutions. I understand that it has now been agreed to by the library committees of both the University and the Medical Institute and that the necessary instructions have been given to the librarians. The arrangement is most welcome, for it extends the scope of each library very considerably.

Infant School Reform.

If our race is to be continued not only as strong and healthy as it has been but also improved then there is no doubt that careful attention must be given to our young children and it is essential that the natural growth of their

mental capabilities shall not be interfered with and stunted. In association with this subject Miss Byett read a most interesting and sympathetic paper at a recent meeting of the Birmingham branch of the National Union of Women Workers, in which she showed how little in reality the children had been considered when arrangements were being made for their care. In the first place, she touched upon the much disputed question of sending infants under five years of age to school and she pointed out that the practice was condemned by medical opinion and was encouraged in no other country than our own. In the second place, she showed how peculiarly ill adapted schools are for the encouragement of the child's natural development. The hours are long, the schoolrooms are dull, badly lighted, not well ventilated, and under present conditions the children must be held under strict control. The result is that in a room full of young humanity a most unnatural silence prevails. The picture is a striking one and contrasts markedly with the conditions required for the proper development of all young animal life and brain power, these conditions being freedom, light, air, and absence of restraint. The child should have unlimited opportunity of using all the faculties during the hours he or she is awake and any attempt to concentrate the attention for more than a very limited period can only be harmful by overtiring a portion of the nervous system and so not only directly injuring that portion but also indirectly doing harm to other parts by depriving them of their proper exercise. Miss Byett's suggestions for the improvement of present conditions are excellent, for they include more and better provided playgrounds, the formation of smaller classes, and more individual attention. Difficulties arise, however, when we ask how these very desirable conditions are to be attained. Of course, if money can be provided there is no difficulty but the limit to which that section of the community which pays taxes can be called upon is being rapidly approached and unless taxation can be more fairly and evenly distributed than it is at present, there seems but little possibility of the necessary means being secured. The natural thing is for the young child to be under the mother's care and the devolving of her responsibilities upon other people should not be encouraged, for it cannot be expected that the sympathy and appreciation so necessary for the young child can be given by others so well as by the mother. If this were thoroughly understood it is possible that the number of infants placed in the public care might be materially reduced, only those children being sent to school whose parents were precluded by the necessities of their lives from attending to them during the day. It might then be possible to put the smaller numbers into smaller groups and so diminish that restraint which is at present necessarily imposed and which is so injurious both to mental and bodily development, for there is not the slightest doubt that bodily and mental growth are dependent upon the constant and happy use of the various bodily organs and senses. On the other hand, evidence is not wanting, both in this and other cities, that the public temper is getting so irritated at the increasing cost of the education, care, and feeding of children that those who have control of the public purse are beginning to see that they cannot extend their efforts much further. More especially they see that they cannot enter upon costly experiments, and arrangements for treating children in the way best adapted to the encouragement of their development would be very costly. Many of us would be willing to face some sacrifice for so important an object but we should face it the more willingly if the public authorities would show that the cost was being equally borne by all sections of the community.

June 5th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The University of Manchester.

THE University grows rapidly and each new development brings with it new wants or requirements. During the last few years the number of students and the range of teaching have much widened. So far, however, there have been few facilities for social communion among the students outside the class-rooms. There are some small, inconvenient, and uncomfortable rooms in a house in Oxford-road called the Men's Union rooms, and on the women's side a similar state of things exists. There is no other provision for social intercourse. In all other British universities, I believe, there are club premises with some sort of provision for social intercourse and the famous unions of Oxford and Cambridge have long been recognised as valuable institutions. The absence of such unions is felt by the University of Manchester. The subject has been much discussed by members of the University Council and Senate, with the result that it is decided that the remedy is to erect a union building modelled on those of the older universities. The proposal is to have one large building divided into: (1) a refectory to be used by all members of the University; (2) a women's union; and (3) a men's union. The Council of the University has offered an admirable site and has decided to build the refectory at the cost of the University. Plans have been prepared and the cost is estimated as follows: refectory, £8000; women's union, £5000; men's union, £10,000. The cost of the first two is provided by money left for the benefit of the women students and by the University, but the scheme cannot proceed till the third sum is assured. The students feel that in the circumstances they can appeal to their friends for help in raising the £10,000. Other universities have done so with success and there seems no reason why Manchester should fail. Sir W. Mather is the chairman of the executive committee of the fund, among the members of which more than £1000 has been raised to start the fund. The scheme, of course, applies to the whole University and it is unnecessary to point out that the medical members will share in all the benefits that will follow from its accomplishment.

The Motor Scourge.

On May 28th a resolution of the general purposes committee of the Levenshulme district council was approved, calling attention to the "terrible nuisance and damage caused by motor vehicles in the district." It was said that a serious danger accrued to persons on the highway from the smoke, grit, and smell and the "raining of clouds of dust such as rendered the sight of other vehicles impossible." It was also suggested by the committee that the revenue from the further taxation of motor-cars should be used "to reduce the damage suffered by the residents on roads, particularly shopkeepers." This latter seems a curious preference. No doubt the shopkeepers on roads infested by motor-cars suffer much pecuniarily from the dust, but so does the dweller in the neat, even if small, "suburban residence" next door. The thing to be aimed at is not compensation for damages but the doing away with the nuisance. On some of the roads about Manchester the reduction in the value of house property has been most serious and the number of empty houses shows that the electric trams, of which Manchester is rather proud, and the motor cars are not unmixed blessings. The various attempts to produce a road surface not to be stirred up into dust are praiseworthy. THE LANCET has referred already to one of these attempts, said to be remarkably successful as an experiment, which has been tried recently by the Northwich urban district council. The roads have been watered from an ordinary watering cart with a solution of calcium chloride. It is said that it has proved an admirable dust preventive and having regard to the longer time during which it was effective it was not so costly as ordinary street watering. The attention of the makers of the cars should be directed to the best means of preventing or of sucking up the dust, so that dwellers by the roadside may not be driven to anathematise a useful invention.

Blackburn Infants.

The terrible and scandalous slaughter of infant lives is leading to efforts for its prevention not only by those who are officially in charge of the health of the community but also by others anxious for the weil-being of their country. Some of these efforts take the shape of rewards of money for the mother of a 12 months' old baby in the hope that she may be influenced by cupidity as well as by natural affection but in Blackburn a somewhat different machinery is being tried by Dr. M. Bannister and members of the Christian Social Union. They have resolved to take during the next year 50 or 60 young mothers and to feed them well for a month in order to encourage breast-feeding and the disuse of artificial foods. It is not clear when the month's feeding is to be given, whether before or after confinement, but if carried out judiciously it cannot but benefit the mothers as well as the babies. Much of the poor feeding of the women is due to ignorance, the result of our faulty scheme of education, and much also to their

employment in mills which lessens the time they have to give to their homes, so that the use of ready-cooked tinned food is too prevalent. The result of this experiment will be watched with interest and all the more if the mothers are taught how, and are willing, to help themselves.

Food Inspection on the Ship Canal.

The various authorities along the Manchester Ship Canal have hitherto had the power of inspecting, and, if unsound, of condemning, all food-stuffs consigned to the port of Manchester, but this was attended with some disadvantages and the port sanitary authority in the meantime was without this power. Recently, however, the Local Government Board made a Provisional Order conferring these powers on the latter authority. In the first instance the corporation supported the application for the Order. Then, after the application had been made and duly inquired into without opposition, the Ship Canal Company represented that the powers asked for, if granted solely to the Port of Manchester, would be detrimental to the interests of the company by diverting traffic to other ports where these powers do not exist. The corporation, therefore, has been persuaded to ask the Local Government Board to defer the Order till a uniform change of regulations could be made in other ports, including (of course) Liverpool. It is a curious position, but the sooner there are no gaps in the arrangements for proper inspection of food coming into Manchester the better for the community. The revelations from Chicago add interest and piquancy to food questions.

Royal College of Surgeons of England.

Mr. George Arthur Wright, B A., M.B. Oxon., F.R.C.S. Eng., is a candidate in the coming election to the Council of the Royal College of Surgeons of England. He is professor of systematic surgery in the Victoria University and surgeon to the Manchester Royal Infirmary and was formerly examiner in surgery at the University of Oxford.

June 5th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Bequest to Gateshead Dispensary.

BY the will of the late Councillor George Gilhespy the sum of £10,000 was bequeathed to the Gateshead Dispensary "to be applied for the purposes of that institution in such manner as the governing body thereof might think fit, and without in any manner limiting or controlling their discretion as to the disposition of the same or the income therefrom" the testator expressed a desire that the income, or some part of it, might be applied for "the purpose of dealing with, or of assisting to deal with, cases of accident to persons injured in any of the factories, works, or other places of business in the borough of Gateshead or in the immediate vicinity thereof." This legacy, less duty thereon, has just been paid over to the treasurer of the institution.

Hospital Sunday Fund.

At a meeting of the committee of management and distribution of the Newcastle-upon-Tyne Hospital Sunday Fund an interim cash statement was presented which showed that there was a balance of £395 3*s*. 3*d*. brought forward from the last account and that the collections in places of worship and manufactories amounted to £4129 5*s*. 4*d*.—£1787 10*s*. 1*d*. and £2341 15*s*. 3*d*. respectively. The receipts, with the balance referred to, totalled £4540 8*s*. 7*d*. and the expenses amounted to £332 3*s*. 11*d*. The fund is maintaining its position but it is a matter of regret that some of the large works have fallen away from the fund, also that church collections showed a decrease of £23 0*s*. 8*d*.

Margarine as Butter.

A flagrant case of substitution has just come to light in the police-courts. John Mardon, aged 50 years, a provision merchant in Middlesbrough of over 30 years' standing and an ex-town councillor, was charged with breaches of the Merchandise Marks Act and the Margarine Act by applying a false description to goods sold. It was stated that Mardon had a shop in South Shields as well as a stall in Middlesbrough Market and in other markets in the district. Owing to a communication from certain people in the trade, who found that they could not compete with Mardon, Mr. Faber, the Danish Agricultural Commissioner in London, visited Middlesbrough in March last and caused purchases to be made at Mardon's stall. Samples of what was sold as pure Danish butter were sent to the public analyst who certified them to be margarine. Margarine at the time was being sold at 4*d*., 6*d*., and 8*d*. per pound, whilst the price of pure Danish butter was 1*s*. 2*d*., so that Mardon was reaping a rich harvest and at the same time preventing honest dealers from having a chance. The defence was raised that the cards "Pure Danish Butter" and "Margarine" had been put in the wrong places by mistake and the stipendiary was asked to regard the offence as one of carelessness. The magistrate could not accept the defence and as the prisoner had been convicted at Darlington and Middlesbrough he was sentenced to four months' imprisonment.

Report on Tuberculosis.

Dr. Henry E. Armstrong presented an interesting report on this subject to the sanitary committee of Newcastle-upon-Tyne. The whole subject is carefully reviewed and such questions as the control of the milk-supply are fully gone into. He strongly insists on the urgent necessity of having properly trained and certified meat inspectors. In Newcastle there are three skilful and experienced officers but though their work is well done there is ample opportunity for the concealment and disposal of diseased meat in the slaughter-houses of so large a city. Dealing with the notification of tuberculosis Dr. Armstrong says that every sanitary authority should have the means of isolating early cases of consumption and other forms of tuberculosis attended by evacuations and discharges, and that the isolation of advanced cases is as urgently necessary in the interest of public health as for any infectious disease. To carry out the eradication of tuberculosis Dr. Armstrong advocates the establishment of a special authority—a national authority—to administer and to execute measures required for the national treatment and prevention of tuberculosis.

June 5th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The Sanitary Condition of Merthyr Tydvil.

DURING the past 40 years the sanitary condition of Merthyr Tydvil has been subjected on several occasions to inspection and report by officials of the Local Government Board and of the General Board of Health. It is a little difficult to decide to what particular circumstances should be ascribed the unsatisfactory position which Merthyr holds among other large industrial centres in England and Wales. It is true there have been periods of depression in the iron and coal trades, when there was little money to spend upon sanitary improvements, but the increase in the population from 46,378 in 1851 to 69,228 in 1901 alone shows that there have been prosperous times as well as unprosperous. The activity of the sanitary authority appears also to have been intermittent and for long periods it is to be feared that it has been more or less dormant. Although one of the first authorities to appoint a medical officer of health, the local board of health which was constituted in 1850 for a long time seemed to think that having installed this officer very little more remained for it to do. The members of the urban district council which succeeded the board of health in 1895 were apparently imbued with the same spirit for until quite recently the number of sanitary inspectors was quite insufficient for the needs of the district. The latest inspection on behalf of the Local Government Board was made by Dr. J. Spencer Low in the autumn of last year. Dr. Low's report, which has just been published, discloses a very distinct improvement since the previous official inspection but it also shows that there is still a great deal to be done in the way of increasing the comfort and enjoyment of life of a large section of the population of the town which in November last was raised to the rank of a municipal borough. An account of the unsatisfactory condition of many of the houses in the borough forms a large part of Dr. Low's report and he expresses the opinion that if better and more abundant dwellings were available for the working-class population there would follow in due course a disappearance of existing insanitary areas as

well as a reduction in the general death-rate of 22·0 per 1000, of the zymotic death-rate of 4·6 per 1000, and of the infantile mortality-rate of 204 per 1000 which prevailed in 1905. About four years ago the sanitary authority erected 100 houses which are let at a monthly rental of 22*s.* 6*d.* Each house contains two living rooms and a pantry on the ground floor and three bedrooms above. In the yard are a coal-house and a water-closet and there is a strip of garden attached to each house. There is no difficulty in finding tenants for these houses but in some instances the rooms have been sublet and overcrowding has resulted. These houses are evidently satisfactory for Dr. Low advises the erection by the council of still more. Another recommendation which he makes is the appointment of one or more female health visitors in view of the enormous infantile mortality in the district. He considers that much good would accrue if such visitors were appointed solely for the purpose of inducing women to feed and to wash their children properly and to keep their homes clean. He also advises that nuisances should receive the immediate and sustained attention of the council and that a refuse destructor and a public slaughter-house should be provided.

Winsley Sanatorium.

The Winsley sanatorium for consumptive patients residing in the city of Bristol and in Gloucestershire, Wiltshire, and Somersetshire has been occupied by patients for about 18 months, so that the first annual report of the working of the institution is of interest. The original buildings provided accommodation for 60 patients but chalets have recently been erected for eight more. The total capital cost was about £33,000 and the weekly cost of maintenance, which was estimated at 25*s.* per patient, was actually during the past 12 months 24*s.* 5*d.* There is still a debt of nearly £14,000 on the land and buildings in spite of the principle which was adopted when the institution was established. That principle was essentially the allocation of beds to subscribers in the proportion of one bed for each donation of £250 and an annual subscription of £65. In this way the corporation of Bristol has the control of 20 beds and the corporations of Bath, Gloucester, and Swindon have also secured the right to nominate patients. There are still seven beds to be allotted in the manner indicated. During 1905 there were 180 patients admitted into the sanatorium, 129 were discharged, and two died. 17 patients showed no sign of improvement on discharge, 30 showed marked improvement but required still further treatment, 33 were considerably improved, and 49 were sufficiently improved to be able to resume work of a suitable character.

Vaccination Prosecutions.

At the meeting of the Clutton (Somerset) board of guardians held on June 1st a member, in accordance with notice of motion, moved that, seeing the circular issued to magistrates under Section 2 of the Vaccination Act of 1898, by the Home Secretary, no prosecution be authorised by the Clutton board of guardians against any person who had applied to court for a certificate of exemption and had been refused; this was seconded, but after some discussion it was eventually decided to send a letter to the vaccination officer calling attention to the Home Secretary's circular and stating that the guardians were of opinion that where applications had been made to the magistrates and refused prosecutions ought not to be ordered and it was also decided to send a statement to that effect to the Local Government Board.

The Royal Sanitary Institute.

A provincial sessional meeting of the Royal Sanitary Institute was held at Bournemouth on May 26th. Mr. P. W. G. Nunn, the medical officer of health of Bournemouth, read a paper on Sanitary Administration in a Health Resort. In the course of a discussion which followed Dr. Joseph Groves, the medical officer of health of the Isle of Wight rural district, insisted that every resident in a district governed by a local authority had the right to demand the sanitary condition which the law afforded him but in a health resort they had to do more than that, they had to recognise the sentiment of hospitality and to take all possible measures that visitors should not be exposed to any avoidable risks. Mr. W. B. Barclay, the medical officer of health of Weymouth, alluded to the overcrowding of health resorts.

June 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Physiological Society in Edinburgh.

A MEETING of the Physiological Society was held in Edinburgh on June 2nd. The meeting place was the physiological department of the University and there was a large gathering of members from various parts of England and elsewhere. The members of the Edinburgh Pathological Club were asked to meet with them but the communications were practically confined to members of the Physiological Society. The meeting nominally began at 9.30 A.M. but the first hour and a half were devoted to social greetings and to the examination of a number of microscopic demonstrations illustrating the communications to be submitted formally to the meeting. The most interesting of these was a series illustrating tissue changes in rats fed on an exclusive flesh diet. This series showed the effect on the thyroid gland, on the kidneys, on the uterus, on the osseous system, on the skin, on the male reproductive organs, and on the structure and development of teeth. In the afternoon the meeting devoted itself to recreation at North Berwick. There was a golf match for those who wished to play over the popular links there, while a cruise to the Bass Rock and a land expedition to Tantallon Castle were provided for non-golfers. In the evening there was a dinner in the North British Station Hotel.

Treatment of Pauper Consumptives in Edinburgh.

An important report has been prepared and submitted to the Edinburgh parish council on the treatment of consumptive patients in the Craiglockhart and Craigleith poorhouses by Dr. E. Carmichael and Dr. R. S. Aitchison, the visiting medical officers to these institutions. As regards male patients, 167 passed through the wards, the period of residence varying from three days to 19 months. Only five were regarded as cured. They considered 90 per cent. of the cases as incurable. At least 34 returned for treatment, some as often as six times. As regards females, 92 patients passed through the wards, only two of these being considered as cured. In their report the medical officers indicate to their board that the open-air treatment should not be thought of as a cure but merely as a potent help in the treatment of tuberculous disease. From this standpoint the results are regarded as satisfactory. The length of time required to effect anything like a cure in the class of patients dealt with was very prolonged. Some of the male patients have been in the sanatorium for over a year and although they have put on weight the physical signs of disease in the lungs remain very marked. Some improve greatly at first and then go downhill. Occasionally these improve again if removed from the open air to the ward and one or two even by returning to work. In fact, to have these patients, especially the men, loafing all these months is bad for them and is sometimes a real hindrance to treatment. The point arises, Should those patients be detained, if they will stay, till they are regarded as cured, or should the aim be merely to get them well enough to work and then advise them to leave? Dr. Carmichael and Dr. Aitchison believe that it would be a benefit to the patients if they were advised to go when they were fit for work or if there were some intermediate place established between the hospital and the house where they might have light work. If they are allowed out to return to their small, badly-ventilated houses or lodgings they run a great risk of relapsing.

The Royal Society of Edinburgh.

This learned body has been much perturbed at the thought of being turned out of its present abode. An influential deputation waited upon the Secretary for Scotland when he was in Edinburgh on June 1st and laid before him their position. They were treated quite frankly and informed that there was no alternative, in view of other interests, but to take their present rooms from them. They were, however, assured that their annual grant from the Government was not to be disturbed; they were also assured that the Government considered it to be its duty to do all it could to help them to get suitable accommodation elsewhere. He suggested, however, that a scheme or schemes should be prepared by the Royal Society, perhaps in association with other societies, and submitted to the Government and to him.

The late Mr. Thomas Gilbert of the University of Edinburgh.

Many old students of the University of Edinburgh will learn with regret that this well-known figure has been removed from the official business life of the University. His face and figure were prominent in the University office where as clerk and registrar he was daily to be seen at his desk. His connexion with the University dates from 1867. To him fell the task of yearly compiling the University calendar and keeping it up to date. He was a loyal and devoted servant of the University and was much valued and esteemed by the Senatus. Outside University work he was a golfer, a bowler, and a violinist. His wife died nearly 30 years ago but he is survived by three sons.

An Interesting Medical Law Case.

In Alloa sheriff court last week an interesting small debt action was heard at the instance of Dr. S. Fergusson, Alloa, who sued the Alloa Glass Works Company for one guinea for a special visit which he paid at the works to attend to an injured workman. It was mentioned in the evidence that while examining and dressing the injured man Dr. Fergusson, who had been called to the accident by telephone, said to the gateman at the works, "Who is to pay for this? You know the Glass Works Company are a peculiar company." The company maintained that although its telephone was used to call the medical man, it was not responsible but that the injured man or his relatives were responsible. The sheriff, in giving decree for the sum sued for, said nobody would suppose that a workman would use the company's telephone for doing his private business. If there had been any mistaken idea on the part of the medical man as to who called him, it was owing to slackness on the part of the Glass Works Company allowing its telephone to be so used. The case excited a good deal of interest and nearly all the medical men of the town were present in court, for the position of the practitioner when summoned to attend a workman upon the premises of the employer is a difficult one and one concerning which constant disputes arise.

The late Dr. William Dougan.

By the death of Dr. William Dougan, which occurred on June 3rd, the medical profession in Glasgow has lost one of its best known and most respected members. Dr. Dougan was a native of South Ayrshire. He graduated M.B., C.M. in 1868 and M.D. in 1872 at the University of Glasgow and began his professional career in Argyllshire. He remained there for only a few years when he came to Springburn, then a rising suburb on the city boundary. In 1892, on the death of Sir George Macleod, he was appointed his successor as medical officer for the post-office, a post which he held with much acceptance until his death. In 1898 Dr. Dougan was elected a member of the town council and served for a term of three years. To the duties of the office he gave assiduous attention and was identified largely with the movement in the town council to provide open spaces and better sanitation in various parts of the city. Dr. Dougan was an enthusiastic golfer and the origin of his illness was due to a chill which he caught while playing last week. He is survived by his wife, two daughters, and two sons.

Western Infirmary, Glasgow.

In view of the opening of the new wards Dr. James H. Nicoll has been appointed one of the visiting [illegible] to the infirmary.

June 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Commission on Trinity College.

THE long-expected announcement of the Royal Commission to inquire into the affairs of Trinity College has at last been made. The terms of reference of the Commission are as follows:—

To inquire into and report upon the present state of Trinity College, Dublin, and of the University of Dublin, including the revenues of the College and of any of its officers, and their application; the method of government of the University and of the College; the system of instruction in the College, and the teachers by whom it is conducted; the system of University examinations, and the provision made for post-graduate study and the encouragement of research; and also to inquire and report upon the place which Trinity College, Dublin, and the University of Dublin now hold as organs of the higher education in Ireland, and the steps proper to be taken to increase their usefulness to the country.

It will be remembered that a Royal Commission was appointed in July, 1901, to consider the condition of higher education available in Ireland outside Trinity College, Dublin. The inquiry now to be made will thus be complementary to that undertaking in pursuance of the former commission, the commissioners now appointed not receiving further evidence on the matters already dealt with. The commission is constituted as follows:—Sir Edward Fry, late Lord Justice of Appeal (chairman); Chief Baron Christopher Palles; Sir T. Raleigh, K.C.S.I., D.C.L.; Sir A. W. Rücker, LL.D., F.R.S., principal of the University of London; H. Jackson, D. Litt., Regius professor of Greek in the University of Cambridge; S. H. Butcher, D. Litt., M.P., late professor of Greek in the University of Edinburgh; Douglas Hyde, LL.D.; D. J. Coffey, M.A., professor of physiology in the Catholic University School of Medicine; and S. B. Kelleher, Fellow of Trinity College, Dublin. The terms of reference appear to have given general satisfaction, though the religious tenets of some of the commissioners have, of course, been made the subject of comment. In the circumstances, the commission should be able to complete its work with expedition.

The Public Health Appointment in Belfast.

At the usual monthly meeting of the city corporation of Belfast held on June 1st, after the standing orders had been suspended, a number of deputations were introduced who wished to put before the corporation their views with regard to the appointment of a medical superintendent officer of health of Belfast. The first represented the Ulster Medical Society. The president, the secretary, and a deputation of 17 other members were in attendance. Dr. W. Calwell (President), who introduced the deputation, said they appeared in pursuance of certain resolutions passed on May 17th which have already appeared in THE LANCET. Professor J. A. Lindsay and Professor J. W. Byers then delivered effective speeches in favour of a progressive public health policy in Belfast, pointing out the absolute necessity of appointing a sanitarian of the highest equipment to fill the important post of medical officer of health to the city. Influential deputations also appeared from the Belfast Citizens' Association and from the Belfast trades council urging that the best possible man should be appointed to the vacant post. At a later stage of the proceedings of the council the chairman of the public health committee made a comical attack on the medical profession and on THE LANCET. He referred to the figures which have appeared in THE LANCET as "statistics which would not bear careful examination," forgetting that these figures have not been successfully controverted, and added that "never was the sanitation of Belfast in a better condition than at the present time." He said that the deputation of the Ulster Medical Society had given Belfast a bad name "and having befouled their nest they came to the corporation and complained that the nest was foul"—concerning which impolite statement the *Northern Whig*, in a leading article reprobating the employment of abusive tactics, said: "It would be more accurate to speak of it as an attempt to clean out a nest that is at present discreditably foul." The statistics point to the latter view being correct. The Registrar-General reports that the annual rate of mortality in the 76 great towns of England and Wales averaged last week 14·2 per 1000. The rate in London was 12, in Edinburgh 17, in Glasgow 19, in Dublin 22, and in Belfast 22. The two last named were the highest in the kingdom, while the mortality-rate for the previous four weeks in Belfast was 23·3. Your readers will not be surprised to learn that it has occurred to some thoughtful citizens that the wisest course in the circumstances would be to ask for a special inquiry to be granted by the Irish Government to look into the whole question of the health of Belfast.

Irish Medical Association.

The annual meeting of the Belfast and District branch of the Irish Medical Association was held in the Medical Institute, Belfast, on June 4th. Resolutions were passed protesting against Section 6 of the Local Government Board Amendment Act and in favour of adding an Irish medical man to the members of the Poor-law Commission. Professor Byers was re-elected president for the ensuing year, Professor Lindsay and Dr. D. Gaussen vice presidents, and Dr. A. G. Robb secretary and treasurer. The following were appointed members of the council:—Belfast: Dr. J. C. Ferguson, Mr. H. D. Osborne, Mr. S. B Coates, and Dr. J. Martin. Country: Dr. A. Mussen (Glenavy), Mr. J. G.

Jefferson (Lisburn), Dr. W. R. Davison (Ballymena), Mr. H. C. Manley (Whitehouse), and Mr. David Wilson (Whiteabbey).

June 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Sanitary Organisations of Paris.

AT a meeting of the Academy of Medicine held on May 22nd, M. A. J. Martin read a paper giving the results of an inquiry which he had made into sanitary matters in the city of Paris from the year 1887 to the year 1905. The application of the public health laws, the organisation for the transport of the sick, disinfecting operations, vaccination and revaccination, and the guarding of the water-supplies, together with hygienic measures undertaken at private expense have given very important results. Thus the general death-rate, which in 1892 was 22·3 per 1000, has gradually fallen to 17·4 per 1000 in 1905, a figure which is about the same as that in various large foreign towns where similar hygienic measures are in operation. Since 1892 the population has increased so that if the old rate of mortality had been maintained the total number of deaths for 1905 would have been 62,070 instead of 47,853 as it actually is, being a saving of 14,217 lives. In the diminution of the total number of deaths the decrease of those from infectious diseases is marked, for all the epidemic fevers formerly so common have much decreased in frequency.

Intestinal Perforation with Suppurating Mesenteric Glands during Typhoid Fever.

At a meeting of the Surgical Society held on May 23rd M. Toussaint read an account of the case of a patient suffering from typhoid fever, to whom he had been called on account of perforation having occurred. In addition to the ordinary signs of perforation there were vesical tenesmus and dulness in both iliac fossæ. M. Toussaint performed a laparotomy and found fluid in the peritoneum, together with a perforation of the intestine which he sutured. He also removed several mesenteric glands. The patient died on the following day and at the post-mortem examination the suture of the perforation was found to be holding well. Many other enlarged mesenteric glands were found and those which had not ruptured contained a creamy white fluid. Similar appearances have been found in other post-mortem examinations.

The University of Paris.

The Council of the University of Paris at a recent meeting voted for the upkeep in the Faculty of Letters of the chair of the Science of Education; of the chair of the History of Civilisation and of Mediæval Institutions; and for the transformation into a chair of the present courses of Auxiliary Historical Science. The council has also definitely approved of the scheme for the extension of the University of Paris. This will include the construction of an Institute of Chemistry covering an area of 9000 square metres. Here will be established the various departments of chemistry belonging to the Faculty of Science and the Department of Applied Chemistry which, since its creation, has been provisionally installed in some sheds (*baraquements*). The cost of this will be 3,000,000 francs which will be divided between the city of Paris and the State. The extension scheme also includes the acquisition by the University, in view of future necessities, of a plot of land of 14,000 square metres which, together with the former plot, was purchased from a religious house. Towards the cost of this land the University will pay 1,900,000 francs and the city 700,000 francs, to which will be added the donation from the Prince of Monaco. On a portion of this area will be erected the Institute of Oceanography founded by the Prince of Monaco of which I have already spoken. At the same sitting of the council M. Proust, a *professeur agrégé*, was nominated to represent the University at the Congress of the Association of French Medical Men of North America.

The Treatment of Whooping-cough by Inhalation of Chloroform.

At a meeting of the Hospitals Medical Society held on May 18th Dr. Henri de Rothschild gave an account of a case in which he had administered chloroform to a child for the reduction of a dislocation of the femur. The child had been suffering from whooping-cough for eight days and Dr. Rothschild noticed that the paroxysms of cough completely disappeared after the administration of the chloroform. The child was under observation for 15 days altogether and although previously to having been given chloroform she had had some 39 paroxysms of cough per diem they ceased entirely after the chloroform. The attacks of vomiting, the cyanosis, and the sleeplessness also disappeared. Dr. Rothschild then tried this method of treating whooping-cough in sundry other children. Out of nine cases of whooping-cough in which there was no doubt as to the diagnosis occurring in children of from two to seven years old, chloroform was used together with oxygen in the apparatus of Guglielminetti with the consent of the parents. In all the nine cases the whooping-cough was cured. Two of the cases had no paroxysms after the narcosis. In four of the cases the paroxysms fell within 24 hours from 39 to 12 per diem and disappeared completely on the fourth day, while in the last three cases the patients were quite well at the end of varying periods, the longest of which was 15 days. In none of the cases did the vomiting recur after the administration of the chloroform and even when the children did cough there was no cyanosis of the face, while both the appetite and the power of sleep greatly improved. The children were kept under chloroform for five minutes and anæsthesia was not pushed to completion but only so far as muscular relaxation, the corneal reflex not being abolished. Dr. Rothschild considers that the chloroform acts as an antispasmodic but does not believe that it has any bactericidal or antiseptic effect.

The Passage of Chloroform from the Mother to the Fœtus; the Presence of Chloroform in Milk.

At a meeting of the Obstetrical Society of Paris M. Nicloux read a paper upon these two questions. Availing himself of his method of giving definite doses of chloroform he made various observations both upon animals and upon women. He came to the conclusion that chloroform easily passed from the mother to the fœtus and noticed one curious point—that the liver of the fœtus contains more chloroform than the liver of the mother. This arises from the fact that the drug is chiefly fixed by fats and the fœtal liver, as is well known, contains much lecithin. M. Budin was of opinion that in obstetrical anæsthesia the chloroform must pass in very small quantities into the fœtal organism, for he had hardly ever observed any phenomena of chloroform intoxication in the child. M. Nicloux said that as regards the question of chloroform passing into the milk he had found that if a she-goat was chloroformed the drug rapidly passed into the milk. If anæsthesia was kept up it appeared that at the end of a certain time the milk contained more chloroform than the blood, from the anæsthetic accumulating in the fat of the milk. The practical point in connexion with this was to remember that chloroform was rapidly eliminated and that a child could be put to the breast with safety some hours after the mother had been chloroformed.

June 4th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

At the Vatican.

IN St. Peter's on May 27th the Pope's appearance as he presided at the beatification of the Carmelite Sisters who were done to death at Compiègne during the Terror in the July of 1794 left no one surprised at the subsequent announcement that immediately thereafter he had to take to bed. The weariness, the pallor, the emaciation, and the general malaise sufficed indeed to convince the least observant at what a sacrifice of personal comfort or even personal safety he was there at all. The truth is that this latest of his attacks of gout—attacks which seem to recur at progressively shorter intervals—was more serious than was suspected. On the night of May 18th the temperature was 39° C. and the restlessness so pronounced that next morning Dr. Lapponi had to intervene with more drastic treatment than he had seen occasion to practise at the first visit. The response was satisfactory and a copious diaphoresis was followed by cessation of suffering at the affected knee and by a fall of temperature to 37·4° C. On the 20th Dr. Lapponi was able to hold out some hope that His Holiness might descend to St. Peter's on the following Sunday to assist at the beatification above referred to—which, somewhat reluctantly, he was

permitted to do. But there is no doubt that the Holy Father's insistence on the step has not been justified by the sequel, and he would have been better inspired had he confided less in his own judgment and more in his physician's. He has not yet been three years a "prisoner in the Vatican" and already his emaciation, his pallor, and his obvious lassitude have been but too apparent to his immediate *entourage*. Impressed with these symptoms his Secretary of State, Cardinal Merry del Val, and his "Maestro di Camera," Monsignor Bisleti, have taken upon themselves to reduce the number of his audiences. Not a few of the faithful indeed have had to leave Rome disappointed in their expectation of seeing him. The "imprisonment" (always, be it remembered, with doors locked on the inside) becomes more and more irksome—a "palace and a garden" on the least healthy of the hills of Rome being a poor substitute for his old Venetian residence fanned even in the dog days with breezes from the Rhætian Alps and the Adriatic. During all the last winter he has suffered more or less from bronchial catarrh and cough and a rather uncertain spring wrought little change in him for the better. At the function on May 13th his hoarseness was remarked and his weariness was such that, contrary to his habit, he had to be carried in the *sedia gestatoria* both in descending to the Basilica and on his return, while even in the palace itself he had to use the *portantina* (bath-chair) just as Leo XIII. had latterly to do. On May 17th, tired as he was and still suffering from coryza, he exerted himself to receive in audience a numerous delegation of Dominicans, headed by the general of the order, who had come with a view to assist at the beatification of the Spanish Dominicans martyred at Tonkin. It was this effort that preceded the attack of gout in the knee which, as already stated, brought Dr. Lapponi to his bedside on the Friday following. The outlook for His Holiness is not re-assuring and provokes speculation full of interest, diplomatic and other, as to whether he will so far take heart of grace as to effect a secret flight to Castel Gandolfo, the summer residence of the Popes on the Alban Hills, or even (for more than change of air) pay a visit *incognito* to one of the many thermal springs in which (private as well as public) Italy abounds. I may add that the Pope is not alone in the Curia as a sufferer from gout. The aged Cardinal Oreglia, dean of the Apostolic College, is similarly afflicted and is not expected to recover. Cardinal Crettoni, too, is confined to bed from the "diva podagra."

May 30th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Antivivisectionist Movement.

THE antivivisectionists, although not very influential in this country, take every opportunity of impressing the public mind, but certain members of the medical profession on these occasions never fail to reply effectively to their opponents. A meeting recently took place in which the subject was vigorously debated. Several hundred persons assembled at a lecture given by a Mr. Brand who spoke very deliberately on the "inhumanity and recklessness of the cruel medical torturers." The opponents of vaccination, who would in England be called "conscientious objectors," also at the same meeting aired their grievances, amidst not very encouraging interruptions. Here I may remark parenthetically that although vaccination is not exactly compulsory in Austria the practical effect is almost the same as if it was compulsory, because all positions in the public services and nearly all private appointments are given only to vaccinated persons. Professor Kassowitz, the well-known specialist on children's diseases and president of several medical societies, responded to all attacks and by his unanswerable arguments discomfited his opponents. Dr. Grün also spoke to a like effect. The audience was soon won over to the views of the medical men, so that a motion brought forward by Mr. Brand condemning the practice of experiments on living animals was rejected and a vote of sympathy with the propagators of scientific methods, proposed by the medical men, was carried amid great disturbance. Although the majority of the clerical Diet of Lower Austria is not very friendly towards the medical profession as a whole, and is averse to vaccination, the members of the Diet present did not feel themselves compelled to help their friends.

Cremation in Austria.

The question of cremating the dead has for some time been receiving much public attention. Until quite recently no means of carrying out this system have been provided in Austria but a company has now been formed with the object of establishing a crematorium. The nearest place where such an institution is in existence is Gotha, in Germany, but the cost of conveying a body there is so high that cremation has hitherto been available only for the well-to-do classes of the population. A Bill has been lately introduced in Parliament, seeking to make cremation optional and demonstrating its usefulness in military service. The Bill was, however, strongly opposed by the Government on moral (!) and religious grounds and was vehemently attacked by the clergy of all denominations although Dr. Jäger, who had introduced it, could prove from Holy Scripture that cremation was not only not forbidden but was practised by the Jews in ancient times and by the early Christians. Nevertheless the Bill did not pass. This is hardly to be wondered at because even in the Western countries, with their more enlightened population, cremation of the dead is not very frequent. In spite of the trouble and expense more than 300 bodies were last year sent to Germany to be cremated, amongst them being, curiously enough, the body of a Protestant clergyman from Hungary. One of the reasons urged against cremation was that it destroyed all the evidence which might otherwise have been obtainable if suspicion subsequently arose as to the cause of death. This is, perhaps, the only valid argument brought forward against the Bill.

Two Cases of Remarkable Nervous Diseases.

Dr. Fuchs recently showed at a meeting of the Neurological Society two cases which were interesting on account of their rarity. The first patient was a man, aged 40 years, who suffered from chronic rhinitis and in whom during the last two years the act of mastication produced an attack of profuse sweating of the right cheek. The attack was only evoked by masticating solid food, the nature of the food being quite irrelevant. The pathology of such conditions was absolutely unknown and several experiments conducted with a view of ascertaining the rôle played therein by the sympathetic or trigeminus nerve respectively were futile. The well-known physiologists Landois and Claude Bernard were themselves victims of the same abnormality although not in such a high degree, only chocolate or some kinds of sour food causing in them facial hyperidrosis. It was also known that nervous children were wont to perspire on the face or on the forehead in certain unusual conditions. The second case was that of a youth, aged 17 years, who had for the last 12 months suffered from occasional fits of complete paralysis of all four extremities whilst retaining full control over his senses. There was no disturbance of his sensory organs but he was absolutely unable to make a movement with any one of his limbs for a period varying from half an hour to 80 minutes. Sometimes the paralysis was so complete as to necessitate his being handled like a dead body; sometimes it was not so complete. The movements of the head were not impaired and no urinary trouble was present. The reflexes during an attack were not changed but the electric reaction of muscles and nerves was considerably lessened. The whole complex of symptoms was typical of the so-called periodical paralysis of the extremities (Erb)—myoplegia periodica. There was no remedy known except hydropathic and electrical treatment and the pathology was also not well known, as happened in many nervous diseases more or less simulating functional disorders.

Radio-activity of the Sulphur Waters of Baden in Austria.

The waters of the sulphur baths in Baden, a renowned health resort near Vienna, have been for a long time—in fact, for over four centuries—in constant use in rheumatic conditions and diseases attended with exudation deposits but their therapeutic value was not exactly understood. The temperature of the springs is rather low, being only from 36° to 37° C., and the chief dissolved constituents are sulphuretted hydrogen and sulphides. An examination of the water made by Dr. Heinrich has now supplied an explanation of its efficacy, for it has been found that both the water and the sulphur deposits on the walls of the springs contain very large quantities of radium and that the emanation is easily detected in the waters if they are heated. The quantity of radium has been compared with that found in other mineral springs and in this respect the Baden waters are said to be second only to those of Gastein. As the action of Gastein water was not explained until its

therapeutic constituent was discovered in radium, so the old-established fame of Baden has now been accounted for by the same potent agent. Several curious photographic representations of objects covered by Baden water and thus made radio-active with a slowly diminishing photo-activity are now exhibited in the town hall.

Institution of a Nothnagel Lecture.

With the object of honouring the memory of the late Professor Nothnagel some of his friends and followers have made arrangements with the University authorities to institute a series of lectures on the therapeutics and pathology of internal diseases, to be delivered on the anniversary of his death. This proposal is a novelty hitherto quite unknown in Austria. Professor Nothnagel's chair has been offered to Professor von Noorden who will most likely also deliver the contemplated lecture and if so he will in this way make his first public appearance as the new director of the clinic. In accordance with the favourite study of the deceased physician the lectures will deal with some subject chosen from the pathology of the alimentary or the nervous system. On both of these questions the newly appointed professor is an authority of wide reputation.

June 2nd.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Mecca Pilgrimage.

THE whole of the pilgrims quitted Mecca some weeks ago, the Egyptian and Syrian caravans being the last to leave. There is said to have been little, if any, disease of a virulent or epidemic type, thanks to the excellent sanitary arrangements of the Imperial Government; but there has been a high mortality among certain groups of the pilgrims, especially the 20,000 subjects of the Indian empire, 11,000 Javanese, and 4000 Algerians. The total number of deaths up to the present is stated by the delegate of the quarantine board to the Hedjas to amount to 4676. Dysentery has, fortunately, been far less prevalent this year.

A Centenarian.

During the taking of the census at Dikli-Djafer, a locality situated in the district of Sultan-Yéri, the age of a Mussulman farmer named Mehemmed Agha was given as 103 years. He is in full possession of all his physical powers and his teeth are good. He had two wives and his descendants amount at present to 79 persons, all living in the villages of the locality named. During the feasts of Bairam he walks on foot to the mosque of a village situated many miles away from his place of abode.

Short Weight in Bread.

In every district of the capital thousands of loaves are being confiscated on the ground of not having either the requisite weight of one kilogramme each or the usual colour. Tevfik Emin Bey, an energetic official of the municipality of Constantinople, personally supervises the inspection of the bakeries and deals severely with all cases of fraud.

The Treatment of Hydrophobia.

Several institutes for hydrophobic patients have been established in the vilayets of Salonica and Erzeroum. Similar measures will also be taken in the provinces situated far away from Constantinople, such as at Sanaa, the capital of Yemen in Arabia, at Bagdad, Damascus, Erzindjan, and Monastir. The necessary funds will be supplied chiefly by the local municipalities. This is being done in order to enable people bitten by rabid animals to be treated on the spot and thus to save time which is of such vital importance in these cases.

A New Jewish Hospital.

In Smyrna the erection of a new Jewish hospital has been commenced. All the necessary funds for the maintenance and equipment of this institution have been offered by Baron Rothschild.

The Prevention of Small-pox.

Energetic measures are being adopted by the *Conseil d'État* in order to prevent the propagation of small-pox in the Ottoman Empire. Instructions have been given that the new vaccination law is to be enforced strictly. The institute for vaccination in Constantinople will be extended and analogous establishments will afterwards be erected in the remoter provinces, such as Yemen, Tripoli in Africa, Bagdad, &c. A public vaccinator will be appointed for each "caza" or district. The financial section of the *Conseil d'État* is at present considering the question of finding the necessary funds for these purposes.

The Russian Hospital in Constantinople.

A new operating theatre and a lying-in ward have been recently provided at the Russian Hospital in Constantinople at a cost of 400 Turkish liras. The operating theatre has been equipped with all the latest requirements of modern medical science and new surgical instruments have been ordered in France. The lying-in ward is intended only for poor women who are Russian subjects and at present contains only three beds but there is a prospect of this number being increased.

The Water-supply of Constantinople.

A special commission has been appointed to consider the question of finding new supplies of drinking water for certain quarters of the metropolis and suburbs. It seems that the sources at Kiathanéh, Halkali, and Kirk-Tcheshméh, the first of which supplies excellent water, are not sufficient. The conduits, which are in many places very defective, will also be repaired.

May 28th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Lunatic Asylum.

Dr. J. Warnock's report on the Egyptian Government Hospital for the Insane for the years 1904 and 1905 has just been published. In the former year the number of inmates in the asylum was raised to 650 in order to check the compulsorily high rate of discharged uncured cases, and as a consequence of this increase in accommodation the number of cases discharged uncured was diminished to 180 in that year, though the number rose again to nearly 400 in 1905. Some overcrowding has resulted, with consequent inconvenience and disorder and an increase of the tuberculous cases from the impossibility of properly isolating them. All these drawbacks will be relieved this year, for the adjoining military hospital is changing its site and in consequence the asylum will eventually gain an increased area of about 75 acres of surrounding desert, including the existing buildings of the Egyptian Army Hospital. The whole asylum land will then be railed in to the obvious advantage of both staff and patients. When these reforms are completed the accommodation will be increased to about 812 beds, but as it is recognised that a second asylum will soon be urgently needed it has been decided to erect one shortly for 600 male patients in the desert 11 miles to the north of the existing asylum, not far from Abu Za'abel, a spot well known to those acquainted with the recent medical history of this country. It was here that Muhammed Ali had, 80 years ago, a camp of instruction for 25,000 soldiers of his army, and it was then that Clot Bey, an energetic Frenchman, obtained leave to establish near the camp a hospital and a medical school in order to provide surgeons and apothecaries for the army. The medical school (transferred later to Kasr-el-Ainy) was a great success, though for a long time Mussulman prejudice prevented the addition of a dissecting-room. The story is that Clot Bey began by dissecting a dog, "not even a Moslem's dog, but a Jew's dog or a Christian's dog," and later he got permission to make use of the corpses of Christians and black slaves, and was even allowed to bring bones from disused cemeteries to his lecture room which had to be surrounded by guards who were kept ignorant of what took place in the room which they were guarding. The second asylum, when it is built, will allow the re-admission to the present building of all criminal lunatics who now have to be kept in the prison hospital at Tura. In spite of the many reforms in the treatment of lunatics which I have been able to record since the appointment of Dr. Warnock to the asylum 11 years ago there is still room for various criticisms which he himself is the first to point out. For instance, no less than 18 attendants were detected and punished for ill-using patients during the year 1905. 70 patients had to be admitted without certificates because their friends were ignorant of the procedure necessary and the patients were obviously in need of hospital care. Several other cases without certificates were, however, refused admission because their condition was not urgent. Six patients entered the asylum of their own free will and several epileptics, neurasthenics, and lunatics in the

early stages now attend gratuitously as out-patients. It appears that the certificates signed by European medical men are now less satisfactorily executed than those by Egyptian medical men. Another interesting point is that, on more than one occasion, "an Egyptian patient who had been declared incapable of managing his own affairs has petitioned that an administrator of British nationality be appointed in preference to one of his own race." Each discharged patient gained on the average 11 pounds in weight during his residence in the asylum which speaks well for the rations supplied and for the restful atmosphere of the place. More than one half of the admissions during the two years were from acute mania, chronic mania, and dementia, and pellagrous and hasheesh insanity. 61 patients suffering from general paralysis were admitted in the two years; 44 of them had signs or histories of previous syphilitic infection, while the other 17 patients had possibly suffered from this disease but no traces of it remained and no trustworthy histories could be obtained. The chief causes of death were general paralysis, pellagra, exhaustion from mania and melancholia, and tuberculosis. "Owing to the overcrowding of the asylum the amount of seclusion and of narcotics used remains deplorably large; mechanical restraint is still unused, except in surgical cases, and more rarely to prevent self-injury."

Cairo Water-supply.

The Khedive lately formally opened the installation of pumps which now supply Cairo with sterile water. For some two years past the work has been progressing and now 22 wells have been sunk some 200 yards from the Nile bank and 320 miles of main pipes have been laid down. The water obtained is clear, colourless, and odourless, with a pleasant taste and a temperature of 73° F. Chemically there is no great difference between this well water and that taken directly from the Nile but the new supply contains no micro-organisms and is practically sterile. During high Nile the well water is twice as hard as the river water but at low Nile, for instance during the present month, the degree of hardness is reduced to the proportion of 7 to 5. The increased hardness of the well water is due to the presence of a larger quantity of bicarbonate of lime and magnesia and not to an increase of sulphate of lime; the hardness is therefore removeable by boiling and the only complaints so far have been that the increased hardness is not agreeable to the delicate stomachs of some water-drinkers and, secondly, ladies complain that it causes their hair to fall out after washing. As compared with the water-supply of large towns in England, Germany, and France the water can be considered fairly soft. The new supply is, of course, nothing but Nile water, filtered naturally through the sub-soil but coming from the Nile from some point well above Cairo. It is considered impossible for this well water to be contaminated by any future infiltration of impure water and it is needless to say that Cairo is now to be congratulated upon having for the first time a pure supply of drinking-water which ought to tend to reduce the mortality from gastro-intestinal diseases and which will be an invaluable aid in the event of any future visitation of cholera. It may be instructive to remind readers what the old water-supply of the town was like a very few years ago. The pumping station was immediately below Kasr-el-Nil barracks and the water, instead of being taken from the middle of the river, was drawn only a short distance from the bank which was quite unprotected from pollution. Moreover, the pumping station was below the drains of cesspools which opened into the Nile from two large palaces and from every house on the right bank of the Nile which was large enough to boast of a drain at all. The filter beds in the desert to which the water was conveyed from the intake were of inadequate size and were unprotected in any way from the sand and dust of a neighbouring abandoned cemetery.

May 30th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dyeing of Foods.

Professor Wiley, chief of the Bureau of Chemistry of the Agricultural Department, Washington, has published the results of recent investigations by Dr. W. D. Bigelow of the Division of Foods, and Mr. Burton J. Howard of the Micro-Chemical Laboratory, as to the adulteration of foods. As far as their application to the preparation of foods is concerned, coal-tar colours have been found to be much more satisfactory from a technical standpoint than the pure vegetable colours. They are readily soluble, are cheap in consideration of the amount employed, and withstand the action of light and time much better than the ordinary vegetable colours available for colouring food. In the preparation of tomato catsup the natural colouring of the tomato is largely destroyed and the addition of a little colouring matter therefore has been resorted to for the purpose of imitating the natural colour. But the addition of colour is often abused and the result is the appearance of a tomato catsup in the markets of a deep red colour, much more vivid than could possibly be obtained without the use of artificial colours. Some manufacturers employ copper compounds for the purpose of imparting a greenish tint to cucumber pickles and the amount of colouring matter used is often so great as to give a vivid green never seen in the original vegetable. The same remark applies to butter and meats. Canned vegetables were found to be adulterated with preservatives, copper, and sulphites; seven in nine samples examined were so adulterated; mushrooms, peas, and tomatoes were all adulterated by the use of sulphites, copper, and borax. There is some adulteration of cereal products; coal-tar dyes and other colours were found in three of ten samples of vermicelli; turmeric and foreign colours were found in 24 out of 28 samples of "noodles"; cocoa and chocolate were found very generally adulterated; foreign substances, all of them deleterious to health, such as certain coal-tar dyes, were in catsup, chilli sauce, and pickles.

Physicians and the San Francisco Disaster.

Dr. Mackenzie, Vice-President of the Medical Association, writes: "About 500 physicians of San Francisco are destitute; diplomas destroyed; brave, resolute, working like Trojans for fellow men; American Medical Association should come to relief; many will emigrate." The Association immediately took steps to open a relief fund with a central office at Chicago and the subscriptions have been large. I gather from the latest information that few physicians escaped the loss of everything, while several lost their lives.

Measures for Preventing the Blindness of Children.

Dr. Park Lewis, President of the committee for improving the condition of the blind, states that from carefully tabulated statistics it appears that in the State of New York alone there are more than 6000 blind persons and in the United States there are more than 50,000 suffering from blindness. The conclusions of the committee are that four-tenths of all existing blindness might have been avoided had proper preventive measures or curative remedies been suitably employed. One-tenth of the cases were due to ophthalmia neonatorum, an infectious, preventable, and almost absolutely curable disease. The preventive measure which the committee recommends is the instillation of a silver salt in the eyes of the newly born infant. The scheme of rendering this treatment effective is, first, to require ophthalmia neonatorum to be placed by health authorities among contagious diseases which must be reported to local boards of health; and secondly, to make the failure to report cases a misdemeanour. It is advised that a standard preparation of the silver salt should be made and all institutions where maternity cases occur should be required to use it. In private practice reliance must be placed on the reporting of cases and the detection of the disease. Several States have found such laws efficient in the prevention of blindness in the newly born.

May 19th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

A Danger in connexion with the Water-supply of Calcutta.

EVERY city in India seems to have periodical difficulties connected with its water-supply. Bombay, Madras, Rangoon, and Calcutta have each had trouble and dangers within the past few years and in the last-named city there has just been discovered a very serious risk of contamination not only for one part but for the whole system of supply. It is said that there has been a larger number of cases of typhoid fever of late in Calcutta than usual but no official

announcement has been made. The recent mistake by the corporation employee which led to unfiltered water being supplied to a house in place of pure water for domestic purposes caused inquiries as to whether the town supply was liable to get mixed with the unfiltered water. The engineers are satisfied that nothing is to be feared in this direction. A serious menace, however, to the inhabitants supplied from the Wellington-square reservoir has been discovered and from this source the European quarter is supplied. This reservoir is underground, is 20 years old, and is only a masonry tank. It is consequently liable to cracks and leaks. It appears that the overflow from the reservoir is connected with the city sewer which runs under the road alongside. This overflow is untrapped and thus permits of sewer gas escaping into the reservoir. Worse still, the levels of the sewer and the reservoir are such that during heavy rain the contents of the sewer rise to within a few inches of the road surface and there is nothing to prevent the diluted sewage from flowing back into the reservoir. This may have happened again and again. During the rains it is not only possible for the level of the contents in the sewer to rise to the surface but to overflow through the gullies on to the surface. As a matter of fact, in many parts of the town this frequently happens. The three reservoirs in the city are of similar construction and the danger is therefore a most serious one. To increase the evil still further the corporation has permitted the construction of a urinal in the very corner of the square within a few feet of the reservoir, and there is also a bathing-place for Mahomedans before prayer almost on top of the covered reservoir.

The Grievances of Lahore Students.

Medical students in India are not backward in expressing their grievances. I have had to record from time to time various unpleasant disturbances but the Lahore students seem to have brought forward their complaints in a proper way. A long petition was presented recently to the Inspector-General of Civil Hospitals in which they complain of receiving discourteous treatment and being subjected to abuse from certain native teachers in the college and assistants in the hospital. They plead for direct communication with the principal instead of through the superintendent and they complain of being overburdened with duties some of which should rightly be performed by the nurses and others by the menials. They further ask for English lectures instead of vernacular ones and state that the books supplied are obsolete and worthless. Finally, they point out that they memorialised the principal a year ago but that no attention has been paid to their grievances. If these grievances be real there is no doubt that the Lahore students suffer from many disadvantages, and especially those students who after study in Lahore proceed to other centres for examination.

The Incidence of Pulmonary Tuberculosis in Calcutta.

An elaborate statistical report on the incidence of pulmonary tuberculosis in Calcutta as shown by the mortality from this disease in 1905 has recently been published by Dr. T. F. Pearse, the special health officer of Calcutta. It appears that for the whole city the death-rate from pulmonary tuberculosis is 1·9 per 1000 but that among the female population it is 2·86 per 1000. The detailed figures show that among Mahomedan females the rate is no less than 4·6 per 1000. Comparisons are made with other places—Bombay, with a rate of 3·8; the jails of India, with a rate of 2·9; and the Burghers in Ceylon, with a rate of 2·3. The incidence of the disease in the several parts of the city is shown and its greater prevalence amongst those living in huts is particularly referred to. The author, apparently by virtue of his official position, has limited his remarks to the prevalence of the disease and makes no suggestions. He contents himself in stating that the great lesson to be learnt from these statistics is that in nearly all parts of the city the conditions of female life strongly predispose to the disease. Those conditions are to a certain extent known and may be summed up generally as "deficiency of fresh air." Imperfect statistics in other places in India and the Orient have made it impossible to institute satisfactory comparisons and the report may after all only express half the truth with regard to the disease in Calcutta.

Plague in India.

The plague mortality throughout India shows a slight improvement—13,295 deaths being recorded for the past week, as against 15,633 for the previous seven days. The severe outburst in Bombay has declined and only 862 deaths from plague were reported for last week. The intense development which occurred in Mandalay has also subsided. There were reported for March no less than 9696 cases, but for April only 332 cases. In Rangoon 344 cases occurred in March and 297 in April. In Moulmein the disease is spreading.

May 9th.

Obituary.

HUGH McLEAN, M.D. ST. AND., M.R.C.S. ENG., L.S.A.

Dr. Hugh McLean died on April 27th at his residence, Main-street, Corbridge-on-Tyne. He had just reached the age of 65 years and had been a well-known medical practitioner in the Corbridge district for the past 44 years, having gone to the village from Newburn where he acted as assistant to the late Dr. Davison. He studied in the medical school at Newcastle-on-Tyne and became qualified in 1862, when he took the degree of M.D. at the University of St. Andrews as well as the diplomas of M.R.C.S. Eng. and L.S.A. Dr. McLean was much respected by those who saw under a rather brusque exterior sterling worth and infinite kindness. As well as being a trusted medical adviser he was one of the old school whom his patients consulted in any of the difficulties arising in the affairs of life. He took a practical interest in matters affecting the social well-being of the village and a few years ago was president of the news room and library but he never took any considerable interest in politics. Up to the time of his death he acted as medical officer and public vaccinator of the eighth district of the Hexham Union. He leaves a family of two sons and one daughter. On April 30th he was laid to rest by the side of his wife who predeceased him by some 25 years.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in May the following candidates satisfied the examiners:—

M.B., B.S. EXAMINATION.

Honours.—*‡George Cockcroft (University medal), Guy's Hospital; ‡Archibald Thomas William Forrester and ‡‖Paul Leon Giuseppi, St. Bartholomew's Hospital; *Montague Leonard Hine, Middlesex Hospital; §Thomas Bramley Layton, Guy's Hospital; §George Percival Mills, University of Birmingham; †‖Charles Max Page, St. Thomas's Hospital; ‖John Heatly Spencer, Charing Cross Hospital; †Violet Ackroyd Turkhud, London (Royal Free Hospital) School of Medicine for Women; *H. François Vandermin, Guy's Hospital; *Rawdon Augustus Veale, University of Leeds; †‡John Alexander Watt, University College; and *§Arthur Stanley Woodwark, St. Bartholomew's Hospital.

* Distinguished in Medicine. † Distinguished in Pathology.
‡ Distinguished in Forensic Medicine and Hygiene.
§ Distinguished in Surgery.
‖ Distinguished in Midwifery and Diseases of Women.

Pass.—Arnold Alcock, Guy's Hospital and Victoria University; Frank Alcock, Guy's Hospital; Harry Reginald Allingham, King's College; Arthur Beeley, University of Leeds; Richard John Bentley, Guy's Hospital; James Francis Blackett, University College, Bristol; Margaret Lucy Augusta Bolleau, London (Royal Free Hospital) School of Medicine for Women; Alexander C. Bryson, Westminster Hospital; Wilfrid E. Burrows, B.Sc., Middlesex Hospital; Thomas Charles Clare, University of Birmingham; George Percival Charles Claridge, St. Mary's Hospital; Colin Clarke, St. Bartholomew's Hospital; Leonard Colebrook, St. Mary's Hospital; Josephine Coupland, London (Royal Free Hospital) School of Medicine for Women; Reginald John Hands Cox, St. Thomas's Hospital; Edwin Thomas H. Davies, St. Mary's Hospital; George De la Cour, University College; K. R. Drinkwater, B.Sc., London (Royal Free Hospital) School of Medicine for Women; James Ernest Dunbar, London Hospital; Edward Vincent Dunkley, St. Thomas's Hospital; Hugh Roker Evans, University College; Cavendish Fletcher, Westminster Hospital; Peter Gifford Foulkes, Middlesex Hospital; Thomas Mellor Hardy, University of Sheffield; William Charles Frederick Harland, St. Bartholomew's Hospital; Pantland Hick, University of Liverpool; Frederick William Higgs, St. George's Hospital; Bernard Higham, St. Thomas's Hospital; Edith Blake Hollway, London (Royal Free Hospital) School of Medicine for Women; Richard Holtby, St. Bartholomew's Hospital; Walter Leopold Holyoak, St. Mary's Hospital; Annie Wainwright Hyatt, London (Royal Free Hospital) School of Medicine for Women; Percy Cecil Parker Ingram, Guy's Hospital; George Francis Jones, University College; Andrew Monro Jukes, St. Bartholomew's Hospital; Cecil Lionel Lakin, Charing Cross Hospital; George Bartley

McKean and James Ernest Martin, University College; Robert Vernon G. Monckton, St. Bartholomew's Hospital; Helen Irene Moss, London (Royal Free Hospital) School of Medicine for Women; Alfred H. Parkinson, B.Sc., University of Leeds; Theodore Charles Pocock, Guy's Hospital; Percy John Probyn, Royal Army Medical College and Charing Cross Hospital; Hamilton Ernest Quick, B.Sc., and Max Balzar Reichwald, St. Bartholomew's Hospital; Philip Meredith Roberts, University College; Lilian Trousdale Rowland, Sophia Seekings, and Nora Frances Smith, London (Royal Free Hospital) School of Medicine for Women; Charles Algernon Stidston, St. Bartholomew's Hospital; B. Tchaykovsky, B.Sc., London (Royal Free Hospital) School of Medicine for Women; Thomas Turner, Guy's Hospital; Howard Francis Warner, London Hospital; John Benjamin Valentine Watts, University College, Bristol; Arthur George Wells, University College; Harold B. Whitehouse, St. Thomas's Hospital; and Lilian Ethel Wilson, London (Royal Free Hospital) School of Medicine for Women.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Kenneth Mayoh Gibbins, St. Mary's Hospital; Dorothea Clara Maude, London (Royal Free Hospital) School of Medicine for Women; William Edward Ruttledge, University College; Harold Brooke Scargill, University of Leeds; Francis William Schofield, Victoria University; Edward Bertram Smith, St. Bartholomew's Hospital; George Wray Sudlow, University College and Victoria University; and Joseph Unsworth, the University and Royal Infirmary, Liverpool.

Group II.—John Stanley Avery, University College, Bristol, and St. Bartholomew's Hospital; Alfred Ball, University College; Alec Barber, St. Bartholomew's Hospital; Rila Beales, London (Royal Free Hospital) School of Medicine for Women; Colin James Galbraith, King's College; Elliott Thornton Glenny, St. Bartholomew's Hospital; Robert Francis Hebbert, St. Thomas's Hospital; George Montague W. Hodges, University College; Frank Percival Hughes, Guy's Hospital; Edith Anne Jones, London (Royal Free Hospital) School of Medicine for Women; Henry Travers Jones, University College; Sidney Herbert James Kilroe, Victoria University; James Jenkins Paterson, B.Sc., and Henry Thomas Samuel, St. Bartholomew's Hospital and University College, Cardiff; William Octavius Sankey, St. Thomas's Hospital; James Ernest Sutcliffe Smith, Victoria University; Grace Maud Stagg, London (Royal Free Hospital) School of Medicine for Women; Alfred George Sworn, University College; Edith Eleanor Tucker, London (Royal Free Hospital) School of Medicine for Women; Stuart William Jackson Twigg, University College; Stanley Upton, St. Bartholomew's Hospital; Fred Newton Walsh, the University and Queen's Hospital, Birmingham; and Ruth Helen Western, London (Royal Free Hospital) School of Medicine for Women.

B.S. EXAMINATION.

Honours.—John Gay French, St. Mary's Hospital; Reginald Affleck Greeves, Guy's Hospital; and Harold Edward Ridewood, M.D. (University Medal), London Hospital.

Pass.—John James, King's College; Charles Ernest Wheatley Lyth, University of Sheffield; James Alexander Milne, London Hospital; Charles Michael Roberts, St. Thomas's Hospital; and Gerald Warren Russell, Guy's Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

CHARING CROSS HOSPITAL FESTIVAL DINNER.—The Hotel Cecil was the scene of the festival dinner of Charing Cross Hospital on May 23rd when Mr. Whitelaw Reid, the United States Ambassador, presided. The loyal toasts were followed by that of "Prosperity to the Hospital," proposed by the chairman who said that one of the striking features of London life was that all classes of the community were working with benevolent effort on behalf of hospitals. It had, however, been stated that not more than 1 in 10 among well-to-do householders contributed to these noble institutions. Surely one-tenth of the community ought not to support a burden that belonged equally as much to the other nine-tenths. Referring to the work of the hospitals, he said that during the year 2465 in-patients were treated at the institution, the number exceeding that of any previous year. Of the 20,552 out-patients treated at the hospital no fewer than 10,385 were cases of accident and emergency. Since the last festival dinner the projected alterations and improvements to meet the increasing demands upon the hospital had been completed with the exception of a small portion of the nurses' quarters which could not be entered upon until the present liabilities were cleared off. Until that time 44 beds in the north wing must remain closed. To provide funds to carry out the scheme of improvements the freehold of the hospital had been mortgaged for £85,000 and the additional sum of £15,000 was now due on account of building and furnishing. The cost of maintaining the hospital and the convalescent home was £20,000 a year and, in addition, £4875 were required to meet the annual interest on the mortgage and the sinking fund, making a total of £25,000. Of this sum £22,000 had to be raised from benevolent sources. Lord Kilmorey responded to the toast. During the evening it was announced that the total amount contributed in connexion with the dinner was £4450, raising the emergency fund to a little more than £12,200.

KING'S COLLEGE HOSPITAL FESTIVAL DINNER.—On May 28th, at the Hotel Cecil, Lord Milner presided over the annual festival dinner of King's College Hospital and referring to the new buildings of the hospital which are being erected in the south of London, in aid of the funds of which an Elizabethan fair was recently held in Lincoln's Inn Hall and grounds, he said that this vast enterprise could only be brought to a complete and successful conclusion by the continued sympathy and generosity of the public. While the present hospital cost some £60,000, the new hospital was estimated to cost £300,000, and while the present building occupied about an acre the new institution would occupy 12 acres. The present hospital provided 244 beds; the new institution was intended to provide 600 beds. The assured income of the hospital from investment was about £4300, while its normal expenditure was £21,000. The difference had to be made up by subscriptions and donations and a large proportion of those subscriptions and donations were made in connexion with the annual dinner. Although he had no connexion with the hospital directly, he had been a student of King's College and it would be a satisfaction to him if he could be of any assistance to the hospital of which all old King's College men felt proud. The toast was responded to by Lord Methuen. During the evening subscriptions and donations amounting to £3382 were announced. Of this sum £1062 will be credited to the removal fund.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on May 24th at 6, Suffolk-street, Pall Mall, Dr. F. H. Champneys being in the chair. A letter was read from the Privy Council inclosing a copy of a resolution passed by the board of the National Maternity Hospital, Dublin, in favour of examinations being held by the Central Midwives Board in Dublin. A letter from the Secretary of the Rotunda Hospital, Dublin, was also read to the same effect. A further letter from the Privy Council, dated May 23rd, was read inclosing copy of a memorandum given to the Lord President of the Council during a recent visit to Dublin. In the course of the discussion on this subject the Board was reminded that on April 10th, 1906, a resolution was passed that the Board was not prepared to hold examinations outside the area of the Act. The Board decided that the question should be referred to the standing committee for consideration and report and the secretary of the Board was instructed to reply to the clerk of the Privy Council stating that the Central Midwives Board would attend to the matter to the best of its power and let him know in due time. A communication from Dr. F. E. Fremantle, medical officer of health of Hertfordshire, raised the point whether a certified midwife who is acting under a qualified medical practitioner is bound to keep a register. The Board decided that a certified midwife when acting as a monthly nurse need not keep a register. The following words were subsequently added to this ruling: "In cases of doubt reference should be made to the medical practitioner in charge of the case." It was reported that the Board after June 24th, 1906, will move its offices to Caxton House, Westminster. The penal cases committee reported that it had considered a letter from Dr. J. Niven, medical officer of health of Manchester, reporting the finding by the local supervising authority of a *primâ-facie* case of negligence against Ada Fisher, a certified midwife, together with her defence and the report of the solicitor thereon. The Board adopted the recommendation of the committee that the midwife should be warned to be more careful in the future as to antiseptic washing before examination of patients. The penal cases committee also reported that it had considered a letter from the clerk of the London County Council, reporting Mary Cecilia Lillie, certified midwife, and Ada Mary Roodhouse, certified midwife, as guilty of persistent disobedience to Rule E 19 (*b*) and as having announced their intention of not complying with the rule, together with their defence to the charges. The Board adopted the recommendation of the committee that the two midwives concerned should be cautioned as to the necessity of strict compliance with the rules and warned that any future report for disobedience from the local supervising authority would probably entail serious consequences. Further, the local supervising authority was to be asked to report in three months' time.

THE COUNCIL FOR THE PROMOTION OF THE HIGHER TRAINING OF MIDWIVES.—The annual meeting of the subscribers to, and friends of this association will be held on Wednesday next, June 13th, at 3.15 P.M., at 32, St. James's-square (London House). H.R.H. Princess Christian will occupy the chair and Dr. C. J. Cullingworth, Miss Alice Gregory, and Mr. W. Crooks, M.P., are announced to speak.

HONOUR TO PROFESSOR TIZZONI.—The Medical Faculty of Bologna has just presented Professor Tizzoni with a gold medal on his completing his twenty-fifth year as teacher in the school. His students also presented him with an illuminated parchment setting forth his services in the treatment of tetanus and in the application of radium to hydrophobia in the human subject.

MEDICAL MAGISTRATE.—The name of Mr. F. H. Morison, M.D., C.M. Edin., D.P.H. R.C.S. Irel., has been added to the commission of the peace for the borough of West Hartlepool.

UNIVERSITY OF CAMBRIDGE.—The Rev. E. S. Roberts, master of Gonville and Caius College, has been elected Vice-Chancellor for the next academical year.—Mr. Leonard Moon, B.C., Trinity, has been elected to the John Lucas Walker Studentship in Pathology.—The Duke of Devonshire, Chancellor of the University, has contributed £500 to the fund now being raised for the University library.—Professor J. B. Bradbury, Professor W. Osler, Dr. S. West, and Dr. J. Rose Bradford have been appointed examiners in medicine; Dr. W. Rivers Pollock and Dr. H. R. Spencer, examiners in midwifery; and Mr. T. H. Kellock, Mr. H. G. Barling, Mr. Stanley Boyd, and Mr. L. A. Dunn, examiners in surgery for the Third M.B. Examination.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill are about to publish "Preservatives in Food and Food Examination" by Dr. John C. Thresh, lecturer on public health at the London Hospital Medical College and medical officer of health of Essex, and Dr. Arthur E. Porter, assistant medical officer of health and chief sanitary inspector of the city of Leeds. In this work of 500 pages a critical examination is made of the various preservatives used in beverages and foods, while the question of unsound food is fully discussed. The authors maintain that "during recent years it has become notorious that serious and widespread epidemics of illness are attributable to the use of food which has become infected with organisms capable of producing disease." The text is elucidated by well executed plates.

ASYLUM WORKERS' ASSOCIATION.—This association, which has for ten years past been working to improve the status of those engaged in nursing the insane, held its annual meeting on June 1st at 11, Chandos-street, London, W. The large room of the Medical Society of London was well filled. The chair was occupied by Sir James Crichton-Browne in lieu of the President, Sir John Batty Tuke, M.P., who had been unexpectedly called away. The report having been presented by the honorary secretary, Dr. G. E. Shuttleworth, its adoption was moved by the chairman who said that it contained a record of excellent work in promoting the interests of the association, which he should like to see comprising a larger number than its present roll of 3227 of those engaged in the asylum service. Having referred to the successful efforts made for including mental nurses in any scheme of State registration and for obtaining pledges of support for asylum pensions from Parliamentary candidates, he said that for the small subscription required for membership was included a monthly copy of the *Asylum News* which was admirably conducted and sometimes contained original contributions of much value from asylum nurses and attendants. The adoption of the report was seconded by Dr. T. B. Hyslop, who spoke of the admirable qualities required and often found in the nursing service of asylums, and was supported by Mr. G. J. Cooper, M.P., and Mr. Will Crooks, M.P., both of whom gave from their experience as asylum managers in connexion with the London County Council instances of devotion and self-sacrifice on the part of asylum nurses and attendants which deserved the highest commendation. Indeed, Mr. Crooks said that he had seen evidence of Christian endurance and pluck in an asylum emergency which would worthily entitle to the Victoria Cross were it a deed of valour by a soldier. Two gold and two silver medals having been presented to two male and two female asylum nurses for long and meritorious service, the President, the executive committee, and the officers were re-elected and a cordial vote of thanks to the chairman terminated the proceedings.

MEDICAL GOLF TOURNAMENT.—The medical golf tournament for 1906 took place on May 31st on the course of the Incorporated West Herts Golf Club in Cassiobury Park, Watford. The competition was 18 holes match play *v.* Bogey under handicap, and the competitors, who numbered 104, were divided into two classes—those with handicaps of 12 and under and those with handicaps over 12. A first prize and a second prize were given in both classes and a prize for the best last nine holes *v.* Bogey. A foursome sweepstake was played in the afternoon. The course was in splendid condition and the comfort of the visitors was well looked after by the secretary of the West Herts Golf Club, Mr. Howard Williams. The day turned out fine and the beautiful park was seen to its best advantage, though the proximity of the trees to the fair-way of the course proved disastrous to some of the less experienced players. In Class I. the winner was Mr. A. W. Soper who with 6 strokes was 3 up on Bogey. Mr. G. C. Bell with 5 strokes was second with 2 up on Bogey. The prize given for the best last 9 holes was gained by Mr. Bruce Hamilton who was 3 up on Bogey. In Class II. the winner was Mr. J. A. West who with 18 strokes was 10 up on Bogey. The second place was awarded to Dr. J. H. Drysdale who with 14 strokes was 3 up on Bogey. The prize for the best last 9 holes was taken by Mr. G. W. Dawson who with 14 strokes was 3 up on Bogey. Mr. Dawson was also second in Class II. with 6 up on Bogey but elected to take the prize for the best last 9 holes. The foursome sweepstake was won by Dr. G. A. Sutherland and Mr. Bruce Hamilton who were 2 up on bogey. For the second place Dr. Percy Kidd and Mr. Rolf Creasy tied with Mr. H. A. Seagrove and Dr. J. Mechan, their score being all square with Bogey.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MAY 30TH.

Poor-law Matters in Ireland.

Captain CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would consider the advisability of adding to the Commission about to inquire into Poor-law matters in Ireland a member of the medical profession who was in thorough touch and sympathy with the Irish Poor-law medical profession, with a view to bringing before the Commission the grievances and disabilities under which the profession laboured at the present time.—Mr. BRYCE, in reply, said: My right honourable friend the Prime Minister has already stated that it is not intended to appoint to the Royal Commission on the Poor-law a member representative of the Irish medical profession. On this subject I may refer to the reply which I gave to the question of the honourable Member for North Fermanagh on April 30th.

Sleeping Sickness.

Sir CLEMENT HILL asked the Under Secretary of State for the Colonies whether he would lay on the table papers and maps showing the results up to the present time of the investigations which had been made under the auspices or with the assistance of His Majesty's Government into the sleeping sickness in the Uganda Protectorate; and whether he would state what administrative steps were being taken to prevent the spread of the disease.—Mr. CHURCHILL in his reply said: A series of reports by the Sleeping Sickness Commission working under the direction of the Royal Society and subsidised by the Government has been issued, partly by the Royal Society and partly by the Stationery Office. No administrative measures of any importance have yet been taken to check the spread of the disease because no practical solution has yet presented itself. The subject is receiving the most earnest attention.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASHTON, GEORGE, M.D. Manch., M.R.C.S., L.R.C.P. Lond., has been re-appointed Medical Officer for Home Patients to the Manchester Royal Infirmary.

BULLEY, F. M., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

CASSIDY, M. A., M.B., B.C. Cantab., has been appointed Resident House Physician at St. Thomas's Hospital.

CUNNINGHAM, N. R., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

DELMEGE, LOUIS EDWARD, L.R.C.P. Edin., L.R.C.S. Irel., has been appointed Medical Officer of Health for the Shire of Huntley, Victoria, Australia.

DICKSON, A. N., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-Patients at St. Thomas's Hospital.

DREW, J. H., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

EDWARDS, FRANK PAYNE, M.B. Cantab., has been appointed Medical Officer of Health for the Shire of Dimboola, Victoria, Australia.

FALK, H., M.B., B.C. Cantab., has been appointed Resident House Surgeon at St. Thomas's Hospital.

GRAY, H. T., B.A., B.C. Cantab., has been appointed Resident House Surgeon at St. Thomas's Hospital.

HOBSON, H. OVERTON, M.D. Edin., has been appointed Examiner in Medicine at the Cairo Medical School.

HOOKER, A. W., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

JEWESBURY, E. C., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

LANDER, CHARLES LLEWELLYN, M.B., B.S., B.Sc. Lond., has been appointed Assistant Surgeon to the Royal Albert Hospital, Devonport.

LA TOUCHE, EDMUND DIGGES, L.R.C.S. Irel., has been appointed Medical Officer of Health for the Shire of Howqua, Victoria, Australia.

MAY, W. PAGE, M.D. Lond., F.R.C.P. Lond., has been appointed Lecturer on the Physiology of the Nervous System at University College, London.

MCDONALD, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Barking District of the county of Essex.

MCENERY, JAMES JOSEPH, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Shire of Kerang, Victoria, Australia.

MCLEAN, JOHN SAMUEL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Shire of Morwell, Victoria, Australia.

NAYLOR, RUPERT GEORGE, L.R.C.P. Edin., F.R.C.S. Edin., has been appointed Medical Officer of Health for the Shires of Bulla and Melton, Victoria, Australia.

NORBURY, L. E. C., M.B., B.S. Lond., has been appointed Junior Casualty Officer at St. Thomas's Hospital.

PARSONS, J. H., M.B., B.S. Lond., F.R.C.S. Eng., has been re-appointed Lecturer in Physiological Optics at University College, London.

PORTER, A. E., M.D., D.P.H. Camb., has been appointed Medical Officer of Health of the Borough and Rural District of Reigate.

SANKEY, W. O., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

SCOTT, ERIC NORHAM, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for Arawata, Korumburra, and Jumbunna Ridings, Victoria, Australia.

SINGTON, H. S., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

SQUIRES, H. C., M.B., B.Ch. Oxon., has been appointed House Physician to Out-patients at St. Thomas's Hospital.

WRIGHT, F. R. E., M.B. Lond., has been appointed Senior Casualty Officer at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board, washing, &c.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance, fire, and gas.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BROMSGROVE, WORCESTERSHIRE, BARNSLEY HALL ASYLUM.—Medical Superintendent. Salary £600 per annum and unfurnished house, with fuel, light, washing, and garden produce.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 a year, with board and lodgings.

EGYPTIAN GOVERNMENT, MINISTRY OF EDUCATION.—Professor of Midwifery and Gynæcology. Salary £400 a year. Also Medical Tutor and Registrar to Kasr-el-Ainy Hospital. Salary £400 a year.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Assistant House Surgeon. Salary £70, with board, residence, and washing. Also Radiographer. Salary £50 per annum. Also Clinical Assistants.

GORDON HOSPITAL FOR FISTULA, &C., Vauxhall Bridge-road, S.W.—Honorary Anæsthetist.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, washing, and attendance.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—Honorary Assistant Surgeon.

INDIAN MEDICAL SERVICE.—Examination for not less than Twenty Commissions.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months, renewable. Salary £60 per annum, with board and residence.

LEEDS, CITY OF, SANITARY COMMITTEE.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary £300 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Pathologist and Assistant to the Medical Staff. Salary £150 per annum.

LIVERPOOL STANLEY HOSPITAL.—Assistant Honorary Ophthalmic Surgeon.

LIVERPOOL WORKHOUSE AND HOSPITAL, Rice-lane, Walton.—Assistant Resident Medical Officer, unmarried. Salary £125 per annum, with board.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrarship.

MIDDLESBROUGH, COUNTY BOROUGH ASYLUM.—Locum Tenens Assistant Medical Officer for about seven weeks. Terms four guineas per week, with board, lodging, and washing.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with residence, board, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road, London.—Ophthalmic Surgeon (female).

NORFOLK AND NORWICH HOSPITAL.—Second Assistant House Surgeon for six months. Honorarium £20, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House Surgeon. Salary £50 a year, with apartments, board, washing, and attendance.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing. Also Pathologist and Bacteriologist. Salary £75 per annum, with lunch. Also House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry. Also House Physician for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Anæsthetist.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Refraction Assistant. Salary £25 a year, with lunch.

SAINT LEONARD, SHOREDITCH, INFIRMARY AND WORKHOUSE.—Resident Assistant Medical Officer. Salary £150 per annum, with rations, apartments, and washing.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £90 per annum, with board and residence.

SHEFFIELD UNION HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, rations, &c.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Assistant Medical Officer (female). Salary £100, with board, lodging, and laundry.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £30 per annum, with board, lodging, and washing.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.—Resident House Physician and Medical Registrar for six months, renewable. Salary at rate of 50 guineas per annum, with board, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

WOKINGHAM, BERKS, LONDON OPEN-AIR SANATORIUM.—Assistant Medical Officer. Salary £100 per annum and all found.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with rooms, board, and washing.

WREXHAM, BOROUGH OF.—Medical Officer of Health. Salary £80 per annum.

Births, Marriages, and Deaths.

BIRTHS.

BATEMAN.—On June 1st, at Heath End, Blackheath, S.E., the wife of F. J. Harvey Bateman, M.A., M.D., of a son.

CAMPBELL.—On May 29th, at North-street, Elgin, the wife of Donald G. Campbell, M.B., of twin sons (one stillborn).

HUBERT.—On June 1st, at Rosehill, Billingshurst, Sussex, the wife of W. A. Hubert, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

FLEMMING—BARRETT.—On 5th June, at St. Andrew's Church, Holborn, by the Rev. Knight McDowell, Arthur L. Flemming, M.R.C.S., L.R.C.P., of 34, Alma-road, Clifton, Bristol, son of the late Thomas Henry Flemming, M.D., of Freshford, Bath, to Violet Helen, second daughter of the late John Barrett, Esq., of Dunham Massey, Cheshire.

MASTER—PERRING.—On May 11th, at the British Consulate, Canea, Crete, Major A. E. Master, R.A.M.C., to Ethel Lucy, fourth daughter of the late Henry Scobell Perring, of Northam, N. Devon.

NOEL—SWEETING.—On June 6th, at St. Margaret's, Westminster, by the Rev. Linton Thorp, vicar of Kennington, Kent, assisted by the Rev. Canon Hensley Henson, rector of the parish, and the Rev. A. J. Carlyle, chaplain of University College, Oxford, Marjorie, elder daughter of Dr. R. Deane Sweeting, of 34, Carlisle Mansions, S.W., to Evan Baillie, only son of Eugene F. Noel, of 15, Cravenhill-gardens, Hyde Park, W.

DEATHS.

HICKS.—On the 30th May, in London, George Augustus Hicks, M.R.C.S., L.R.C.P., of Bournemouth East, son of the late Thomas Hicks, Esq., of Upton-grove, Torquay, in his 70th year.

LYLE.—On June 2nd, at Eversley, Elmfield-road, Bromley, Kent, Elizabeth Ada, the dearly loved wife of H. Willoughby Lyle, M.D., B.S. Lond., F.R.C.S. Eng., of Bromley, Kent, and 29, Charles-street, Berkeley-square, W.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE BRITISH ELECTRIC INSTITUTE.

A MEDICAL man has forwarded to us certain literature emanating from the British Electric Institute which has its headquarters at 25, Holborn-viaduct, London, E.C. The literature consists of a pamphlet entitled "A Sound Mind in a Sound Body" and ten folios of typewritten matter which was sent to a patient of our correspondent. The pamphlet, which is obviously written to puff the apparatus which is sold by the British Electric Institute and which is called the "Ajax Dry Cell Battery," is a very cunningly drawn document. It is an admirable instance of Tennyson's dictum that a lie which is half the truth is ever the basest of lies. It quotes various passages from standard books on the medical use of electricity and then goes on to say that the Ajax dry cell is the most convenient way of applying electricity. For instance, under the heading "Paralysis" the pamphlet quotes the name of Dr. Erb as holding that benefit may occasionally be obtained in cases of paralysis from the use of a continuous galvanic current. It then goes on to say: "We can heartily recommend Ajax dry cell as being the most favourable and effective means known for the treatment of this complaint and our successful experience in many even aggravated cases justifies that confidence." On p. 7 the pamphlet states that the medical chapters herein have been compiled by a fully qualified English doctor and "We are also prepared to prove that we can do what we say we can do and submit our system to medical men or laymen. We court inquiry and welcome investigation." On p. 15 we find the following: "We invite the most thorough examination and criticism of the profession." Having read these pressing invitations we paid a visit to the British Electric Institute which or whom we found housed in three somewhat grubby rooms on the second floor of 25, Holborn-viaduct. Having been strictly interrogated as to whether we had been previously in correspondence with the institute we were shown into a small room upon a table in which lay a belt and a volt-meter registering up to about nine volts. The active part of the belt consisted of six small dry cells connected in series to two sets of metallic discs and a current collector very indifferently finished in the common form of a semicircle of studs furnished with a metal radius. The gentleman who was deputed to show us the apparatus was exceedingly polite and having connected the naked metal ends of the leads of the volt-meter with the naked metal discs of the belt (we should add that a washleather cover is supplied for use when the belt is worn) the volt meter showed a reading of between eight and nine volts. We then asked him how much current the battery would give and he said that we could see for ourselves that it was about nine volts. When we pointed out that voltage does not mean amount he frankly said that he knew nothing about that, that nobody had ever asked him about the amount of current before, but he said, "I will fetch the manager." When the manager arrived he proved to be even more ignorant than the assistant. Like him, when we inquired how much current was passing he said he had never been asked the question before. We then pointed out that on p. 2 of another pamphlet issued by the institute, called "Electrical Expert Opinion on Ajax Dry Cell," it was stated that Ajax dry cell "not only gives a current of great volume but produces it without any preparation." We then asked him what volume of current the battery before us gave, when he said: "You can see the *volume* of voltage is nine volts." On our pointing out that there was no such thing as a volume of voltage he told us to look at the electrical opinions in the pamphlet to which we have referred. We did so and there found that the six-celled battery with a total voltage of 8·4 volts was said to give, with all the cells in circuit, 0·84 of a milliampère through 10,000 ohms resistance. We then inquired if the six cells were made of the usual constituents of dry cells, whereupon he said that they were just the same except that they were put up in flattened cases instead of cylindrical. We then pointed out that the retail price of such cells was about *1s. 2d.* each, with which statement the manager agreed. When we said that the cells and belt together must have cost under 10*s.* and that it was sold for 15 guineas he allowed that the sum of 15 guineas was a great deal more than the intrinsic value of the belt but he said "our expenses are enormous in pushing our business." When we hinted that to make £15 5*s.* profit on an expense of 10*s.* must be an eminently lucrative business we are sorry to say that the manager lost his temper and asked us if we had come to buy a belt or merely to get information. When we said that we had come to get information, and, moreover, that we had got it, he wished us good-day and slammed the door behind us with unnecessary violence. Now, there is no law to prevent anybody manufacturing a thing at the cost of under 10*s.* and selling it for 15 guineas if he can find anybody foolish enough to buy, but there is a law against obtaining money under false pretences and the pamphlet from which we have quoted, in our opinion, would come under this law. The total voltage of the six cells which we saw running through the volt-meter was about 8·5 volts. The average resistance of the human body, excluding mucous surfaces, even in the most favourable circumstances, is 6000 ohms. These two factors, therefore, give a current of 1·4 milliampères, a current which we do not hesitate to say would be useless, applied by means of a belt, in any form of catarrh, ague, or epilepsy, all of which diseases the British Electric Institute professes to cure. As for paralyses, currents of 1·5 milliampères are sometimes useful in facial paralysis if applied over the course of the nerve with a labile electrode. But as applied through a probably imperfect contact by means of a belt fastened round the waist such a current would, it may be said, be useless in any form of paralysis. For all this a current of one and a half milliampères continuously applied for many hours would be quite enough to cause blistering and, as a matter of fact, the manager allowed that a certain number of his clients had complained of blistering. As the institute has asked for the criticism of the profession we say plainly that the whole pamphlet, "A Sound Mind in a Sound Body," is written to mislead; that the belt, although the cells are active, does not give a current of any practical medical use except in so far as it is a very roundabout way of blistering; that the collecting apparatus, which the assistant informed us was a trade secret, is one of the very commonest forms of current collector and is extremely carelessly made; and that the whole apparatus is worth at the most liberal estimate 10*s.*

THE NEW NAVY TOBACCO.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 2nd, p. 1580, in referring to the above (and the Analytical Report in your issue of Nov. 4th, 1905, p. 1338) the following occurs: "The firm whose name was mentioned in the Analytical Report are only wholesale agents." If you refer to the report the only name mentioned is my own. I do not and never have dealt in manufactured tobacco. Being of public importance, with the knowledge of the Admiralty, I submitted it to you. As my position as expert precludes my trading you will at once see the necessity of removing this impression. As far as Messrs. Cohen, Weenen, and Co are concerned you will see by enclosed they are acting by consent only. Kindly correct this in next issue and oblige,

Yours faithfully,

West Worthing, June 4th, 1906. F. VICTOR CHALMERS.

*** "The enclosed" were two letters from the Director of Victualling in the Admiralty, the one addressed to Mr. Chalmers, the other to Messrs. Cohen, Weenen, and Co. We gave Mr. Chalmers's name in our Analytical Report of the tobacco, for we make it a rule in our Analytical Reports always to give the name of the person or firm sending in substances for analytical notice.—ED. L.

"FACTS."

WE publish the following letter, for apparently it is the writer's wish that the story should be made public, but in kindness to her we omit her name and address. Allowance must, of course, be made for anxiety produced by affection, but the extraordinary ignorance and intolerance exhibited are a little droll when it is remembered that the writer claims to be the daughter of a physician and the wife of a surgeon. Our correspondent having invited an opinion upon her "facts," ought to know that in everything which he did the medical man was right and that on her own showing she has been ignorant and rude.

To the Editors of THE LANCET.

I am an M.Ds. daughter and my husband was a surgun, so I know how Dr. ought to ackt.

Now what do you think of the following facts.

Last sunday week we had a very bad case, which we where sure was diptheres so we send for Dr. call ——, who looked at it and said he was sorry we had used so much Condys. as he was afraid the germs would be killed. He swabbed his throat out with lint, put it in a box, sat down and wrote a paper out. he said nothing in fact ask nothing and went away. Some hours later he send a very astringuent medicine which ought to have been a gargle, and the boys inside gave congestion and fever, so only 2 doses where taken, and the throat grew much worse; after 26 hours the Dr. came again to say that the hospital pronounced it to be dipheria, we hope he took time enough to tell us what we alredy know. We told the delay was disgraceful, and might cost the boy his life, we did not want his visit again. We got an other Dr. who called it an acute case, so bad that he thinks paralysis may come on and might be an invalit for Life.

Please censure this fool of a man, tell him he has got a lot to learn if he canot diagnose a throat.

He lives in ——. Believe me yours faithfuly

——.

PAROGEN: A NEW BASIS FOR LINIMENTS.

A COMBINATION of liquid paraffin and ammonium oleate is widely used on the continent as a general basis for the preparation of liniments under the names parogen, vaso-liniment, and oxygenated paraffin. In the *Pharmaceutical Journal* of May 19th useful formulæ are given for the preparation of parogen and various compound liniments having parogen as a basis. In the following summary the parts are expressed in percentages, solids by weight, and liquids by measure. Parogen forms a clear solution, consisting of liquid paraffin, 40; oleic acid, 40; and ammoniated alcohol, 20. A more viscous form, known as thick parogen, is prepared by varying the proportions of the ingredients named and adding hard paraffin. Parogen mixes readily with a great number of substances which are used for external application. Thus, iodoform

parogen consists of 1·5 per cent. of iodoform dissolved in parogen. The percentages of other substances, which may be combined in this way may be quoted: creasote, 5; oil of cade, 25; eucalyptol, 20; guaiacol, 20; ichthammonium, 10; menthol, 2; naphthol, 10; tar, 25; and salicylic acid, 10. The odour of iodoform parogen may be masked by replacing 1·5 per cent. of parogen by eucalyptol. Camphorated chloroform parogen contains camphor, 37·5; and chloroform, 2·5. Mercury parogen is prepared by triturating 40 parts of mercury with 20 parts of wool-fat until metallic globules are no longer visible and adding 60 parts of thick parogen. In preparing iodine parogen 10 parts of iodine in powder are dissolved in 40 parts of oleic acid, to which are added liquid paraffin 40 parts and ammoniated alcohol 10 parts. This liniment may be diluted, e.g., by mixing 60 parts with 40 parts of parogen. Sulphur parogen is made by dissolving three parts of sulphur in 37 parts of linseed oil and diluting to 100 parts with parogen. Compound sulphur parogen contains sulphur parogen, 10; oil of cade, 10; thymol, 0·3; eucalyptol, 3·0; oil of turpentine, 30; diluted to 100 with parogen. These products have been found useful in dermatological practice owing to their penetrating power being greater than that of soft and liquid paraffins; this is due to the presence of ammonium oleate. Moreover, the wide range of substances which are capable of solution in parogen renders it particularly useful as a basis for liniments. In addition to the substances named potassium iodide and some other salts can be combined with parogen. It has also been used as a basis for injections in the treatment of abscesses.

THE A. E. JONES FUND.

To the Editors of THE LANCET.

SIRS,—Will you allow me to acknowledge in THE LANCET the receipt of the following additional subscriptions to the above fund?

I am, Sirs, yours faithfully,

45, Queen Anne-street, W., June 5th, 1906. C. WYNN WIRGMAN.

	£	s.	d.		£	s.	d.
Dr. H. Radcliffe Crocker	3	3	0	Dr. H. Lambert Lack ...	1	1	0
Dr. T. L. Llewellyn	2	2	0	Dr. A. M. H. Gray	1	1	0
Anonymous	2	2	0	Mr C. H. W. Parkinson*	1	1	0
Captain J. W. F. Rait, I.M.S.	1	1	0	Dr. Arthur H. Evans ...	1	1	0
Dr. H. J. Scharlieb, C.M.G.	1	1	0	Mr. N. R. Phillips	0	10	6
Dr. S. A. Owen	1	1	0	Mr. S. F. Forsdike	0	10	6
				Dr. D. M. Hughes	0	10	6

* From the Dorset and West Hants branch of the British Medical Association.

A WELL-WON MEDAL.

A LANCASHIRE correspondent writes:—"Some may possibly remember the brave deed of a baker's carter named Stockton at Warrington on March 6th, 1905. While cleaning a sewer a workman was overcome by foul gas and became unconscious. Two of his mates went to his help and were also struck down by the gas. Stockton, who was passing, volunteered to try to save them and descended the manhole. At first he was driven back but tried again and brought up one man alive. Then he went down again a third and fourth time and brought up the other two, but one was dead. He was awarded the Stanhope medal, the highest and most prized award for life saving and commemorating what was considered to be the bravest deed of the year. It has never come to Lancashire since its institution in 1873 and Lancashire is therefore proud that the county possesses so brave a man."

WANTED—HOME FOR AN EPILEPTIC.

To the Editors of THE LANCET.

SIRS,—Could any of your readers kindly inform me whether there is any likelihood of employment being obtained by a parlourmaid subject to epileptic fits in some kind of epileptic home or farm colony? The girl can give good references but is now in danger of not being engaged by any lady considering the fact of the epileptic history. Her relatives are unable to maintain her.

I am, Sirs, yours faithfully,

May 18th, 1906. "BEXHILL."

LYXHAYR—A SANITARY BED STUFFING.

Messrs. Lyxhayr, Limited, of Grove Mills, Mitcham, Surrey, have sent us a specimen of "lyxhayr," which is a material designed to supersede ordinary bed stuffing. It is purely a vegetable fibre prepared in a special way, so that it is very suitable for the purpose. It is a "springy" material, black in colour, and absolutely without odour. During its preparation from the raw fibre "lyxhayr" is sterilised. It is used extensively, it is stated, in hot climates with very satisfactory results, which we can well believe in view of a few crucial experiments which we made with it. "Lyxhayr," we should say, provides a very cleanly and healthy material for stuffing mattresses and the like. The proprietors state that they could mention more filthy cases than that described in an annotation under the heading of "Loathsome Bed Stuffing" published in THE LANCET of March 10th, p. 690.

THE PSYCHO-PHYSIOLOGY OF MOTORING.

A MEDICAL man, above the pseudonym "Motor-Therapeutist," desires to know of any references or experiences throwing light on the psycho-physiological effects of motoring in health and disease.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

SATURDAY (16th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (12th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. H. French and Dr. H. T. Hicks: Mitral Stenosis and Pregnancy.

WEDNESDAY (13th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Meeting.

THURSDAY (14th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Macnaughton-Jones. Paper:—Dr. R. Lyle: A Series of 50 Consecutive Abdominal Sections.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Pernet: Clinique. (Skin). 5.15 P.M. Lecture:—Dr. D. Grant: Disorders of Hearing due to Residua of Suppurative Inflammation of the Middle Ear.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. 11. A.M. Minor Operations. 12 noon. Dr. Low: Pathological Demonstration. 2 P.M. Medical and Surgical Clinics. 2.30 P.M. Operations. 3 P.M. Mr. Paget: Demonstration in Surgical Wards. 5 P.M. Dr. Davis: Renal Disease.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M. Operations. Sir D. Duckworth: Medicine. 3.15 P.M. Mr. W. Turner: Surgery. 4 P.M. Dr. St Clair Thomson: Throat and Ear. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon. Ear and Throat.

CHARING CROSS HOSPITAL.—4 P.M. Dr. MacLeod: Demonstration (Dermatological). (Post-Graduate Course.)

TUESDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. W. Carr: Clinique. (Medical.) 5.15 P.M. Lecture:—Mr. R. Johnson: The Diseases of the Breast which may Resemble Carcinoma.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. 10.30 A.M. Dr. Moullin: Gynæcology. 11 A.M. Minor Operations. 2 P.M. Medical and Surgical Clinics. 2 30 P.M. Operations. Skin. Throat, Nose, and Ear. 5 P.M. Dr. Taylor: Treatment of Enteric Fever.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M. Operations. Dr. R. T. Hewlett: Medicine. 3.15 P.M. Mr. Carless: Surgery. 4 P.M. Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon. Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. BUZZARD: Ilio-Psoas Type of Myopathy.

NORTH-EAST LONDON POST GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Mr. H. W. Carson: Tuberculous Laryngitis.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell-square, W.C.).—5 P.M. Dr. C. E. Harris: The Manufacture and Sophistication of Potable Spirits. (Lecture I.)

WEDNESDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. L. Cheatle: Clinique. (Surgical). 5.15 P.M. Lecture:—Mr. J. Poland: The Use of Mechanical Appliances in Surgical Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. Diseases of Children. 11 A.M. Minor Operations. 12 noon. Dr. Russell: Medicine. 2 P.M. Medical and Surgical Clinics. 2.30 P.M. Operations. Diseases of Women. 3 P.M. Mr. Bidwell: Intestinal Anastomoses. 4.15 P.M. Dr. Beddard: Medical Cases. 5 P.M. Dr. Cole: Melancholia and its Treatment.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M. Operations. Dr. F. Taylor: Medicine. 3.15 P.M. Mr. M. Robson: Surgery. 4 P.M. Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 11 A.M. Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Demonstration:—Mr. Stuart-Low: Ear.

THURSDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical). 5.15 P.M. Lecture:—Mr. M. Fletcher: Certain Points in the Diagnosis and Treatment of Meningitis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. 11 A.M. Minor Operations. 12 noon. Dr. Low: Tropical Medicine. 2 P.M. Medical and Surgical Clinics. 2.30 P.M. Operations. Mr. Dunn: Eye. 4 P.M. Dr. Hood: Medical Cases. 5 P.M. Mr. Edwards: Rectal Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M. Operations. Dr. G. Rankin: Medicine. 3.15 P.M. Sir W. Bennett: Surgery. 4 P.M. Mr. M. Davidson: Radiography. Out patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon. Ear and Throat.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Bosanquet: Demonstration (Medical). (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond street, W.C.).—4 P.M. Lecture:—Dr. Still: Some Disorders of Movement in Children.

ROYAL INSTITUTE OF PUBLIC HEALTH (37, Russell-square, W.C.).—5 P.M. Dr. L. W. Sambon: The Rôle played by Animals in the Causation and Transmission of Disease (illustrated by lantern slides, coloured diagrams (by Signor Terzi), and microscopical and other specimens).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. G. P. Chappel: Hæmatemesis.

FRIDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Clinique. (Ear).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. Practical Anæsthetics. 11 A.M. Minor Operations. 2 P.M. Medical and Surgical Clinics. 2.30 P.M. Operations 3 P.M. Mr. Bidwell: Intestinal Surgery. 5 P.M. Mr. Paget: Surgical Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.30 P.M. Operations. Dr. R. Bradford: Medicine. 3.15 P.M. Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon. Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. A. Turner: Paralysis Agitans.

SATURDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Medical and Surgical Wards. 11 A.M. Minor Operations. 2 P.M. Medical and Surgical Clinics. 2.30 P.M. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M. Operations. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 11 A.M. Eye.

EDITORIAL NOTICES.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 7th, 1906.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 1	29·55	W.	...	116	64	48	49	53	Cloudy
,, 2	29·88	N.E.	0·04	91	61	48	49	51	Raining
,, 3	30·02	N.	0·03	117	69	44	57	61	Cloudy
,, 4	30·26	N.E.	...	104	62	46	54	58	Cloudy
,, 5	30·38	N.E.	...	111	65	45	45	49	Cloudy
,, 6	30·35	E.	...	117	69	48	51	54	Fine
,, 7	30·25	E.	...	114	71	47	53	59	Fine

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